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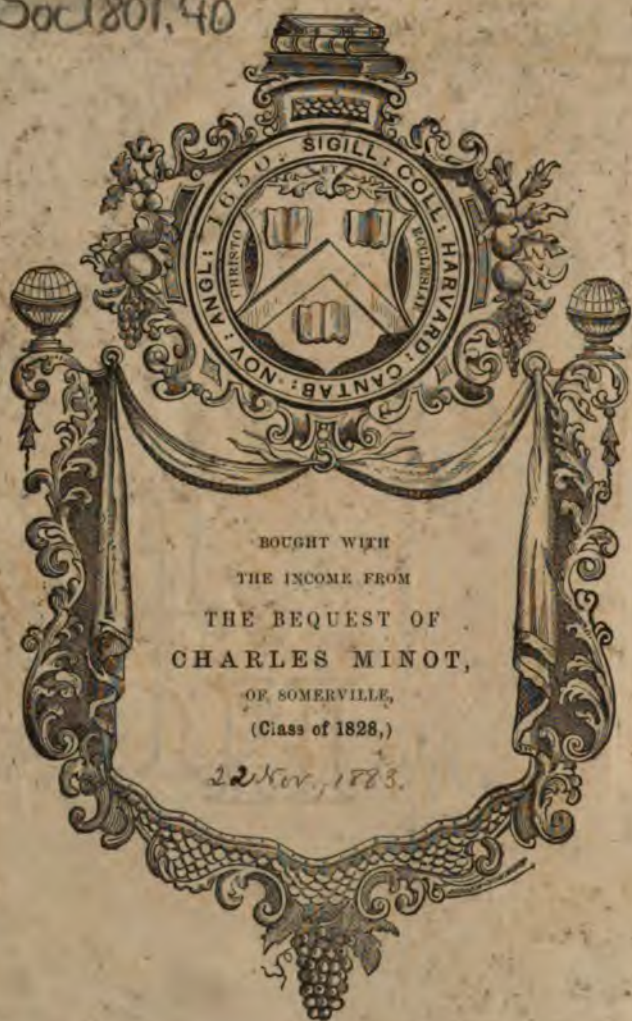
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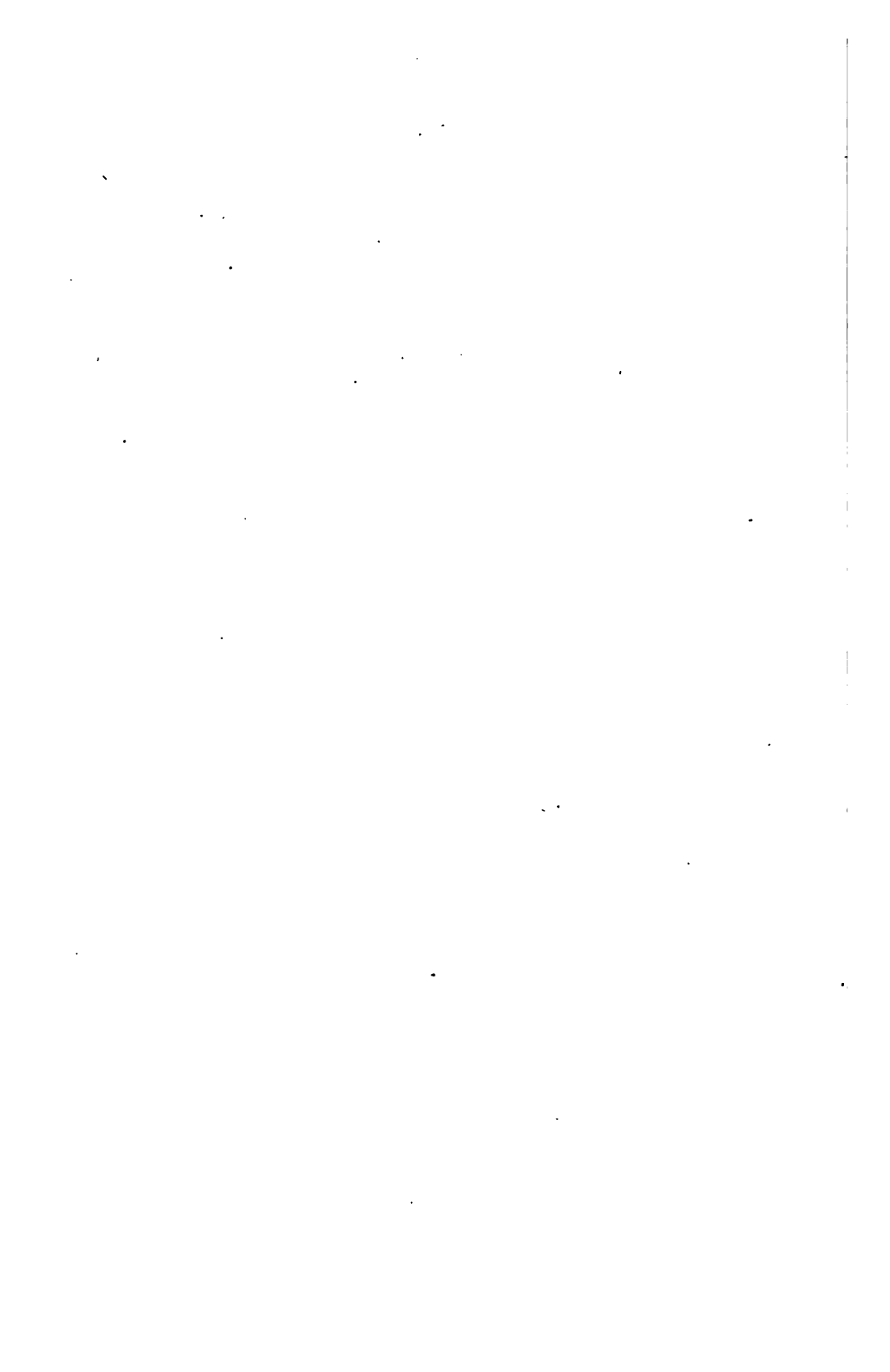
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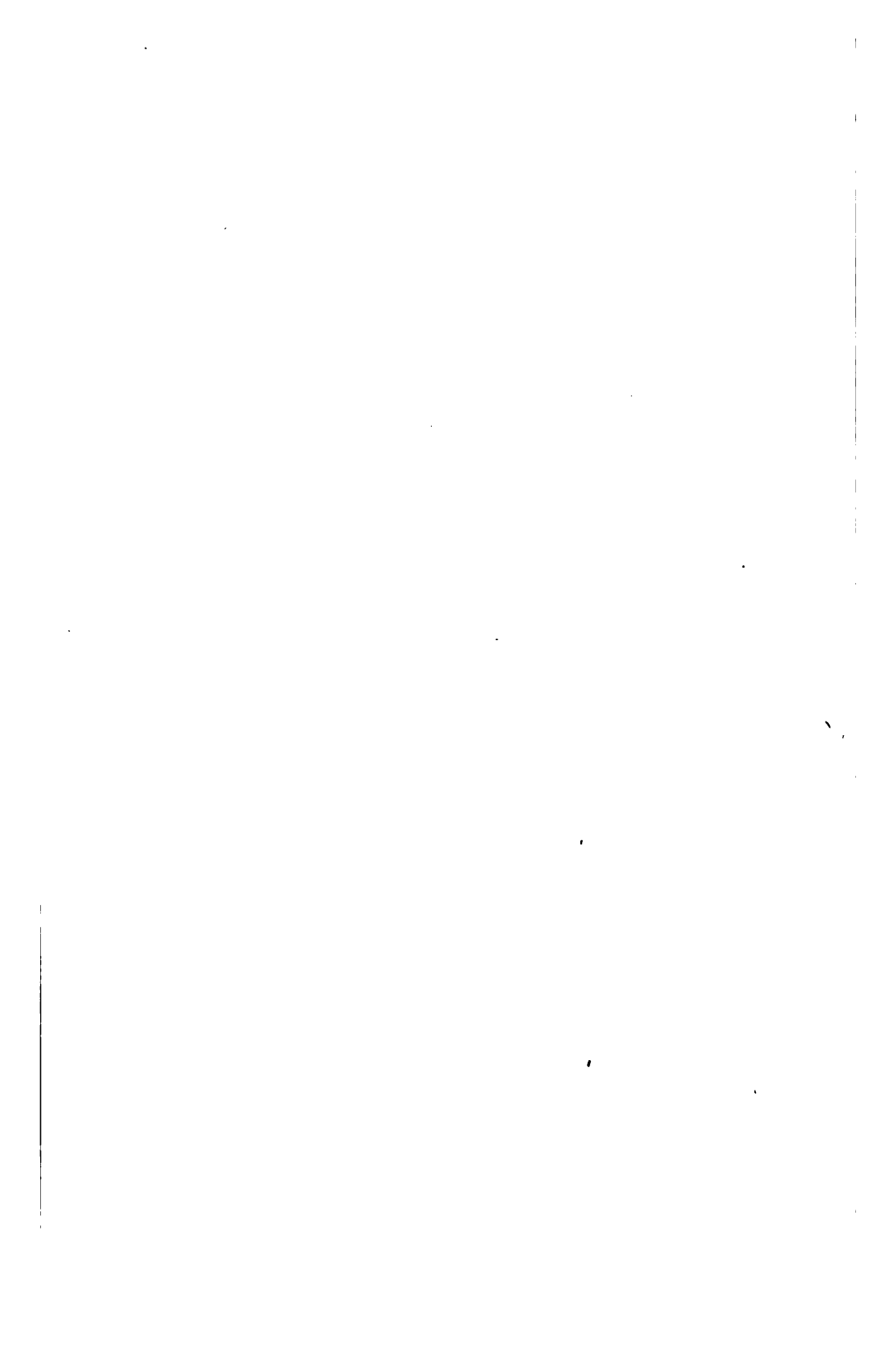
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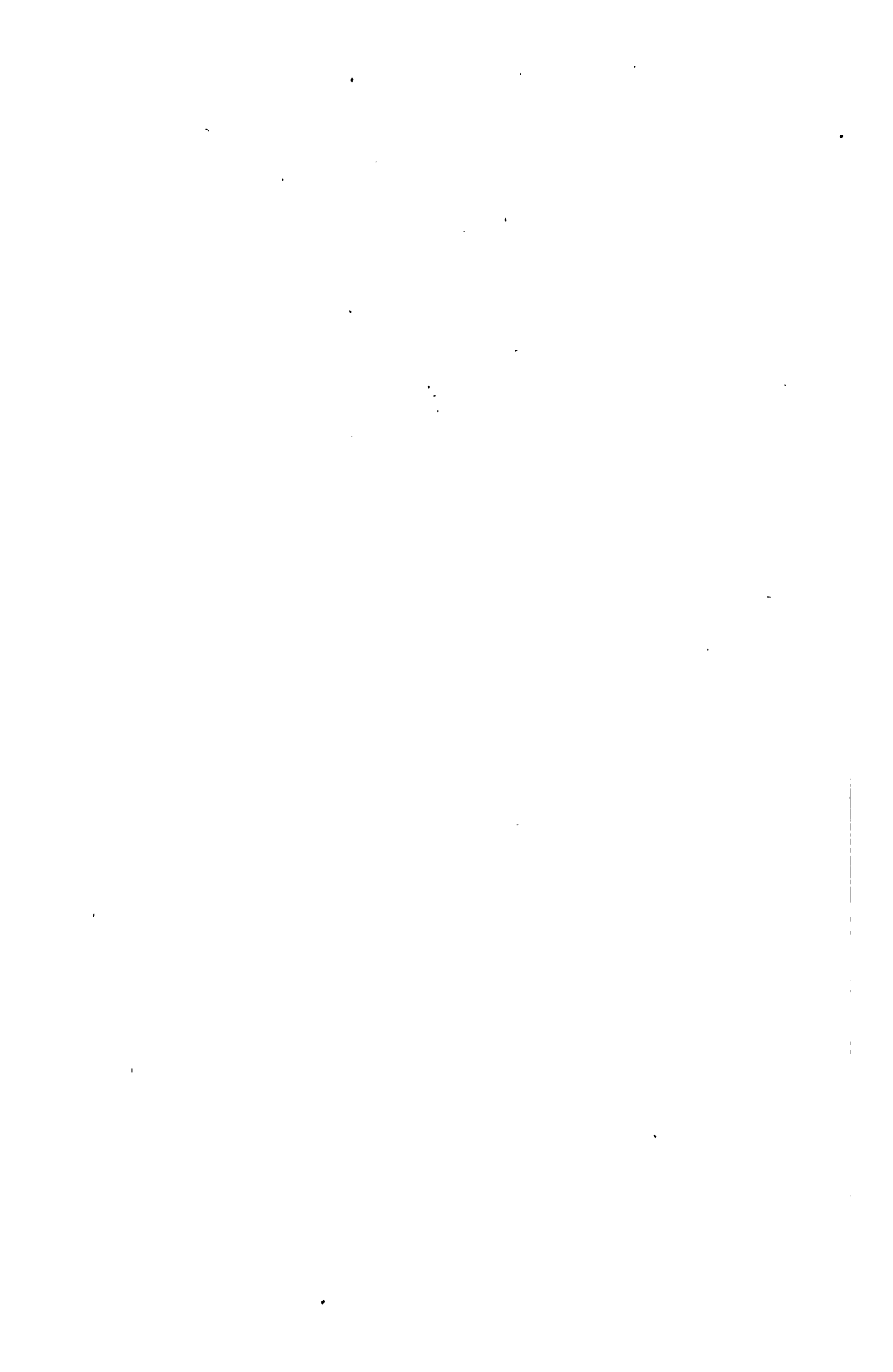


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JOURNAL OF THE TRANSACTIONS
OF
THE VICTORIA INSTITUTE.

VOL. XII.

JOURNAL OF
THE TRANSACTIONS
OF
The Victoria Institute,
OR
Philosophical Society of Great Britain.

EDITED BY THE HONORARY SECRETARY,
CAPT. F. W. H. PETRIE, F.R.S.L., &c.

VOL. XII.



LONDON:

(Published for the Institute)

HARDWICKE & BOGUE, 192, PICCADILLY, W.

E. STANFORD, CHARING CROSS.

1879.

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~~VIII, 284~~

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WYMAN AND SONS, PRINTERS,
GREAT QUEEN-STREET, LINCOLN'S-INN-FIELDS,
LONDON, W.C.

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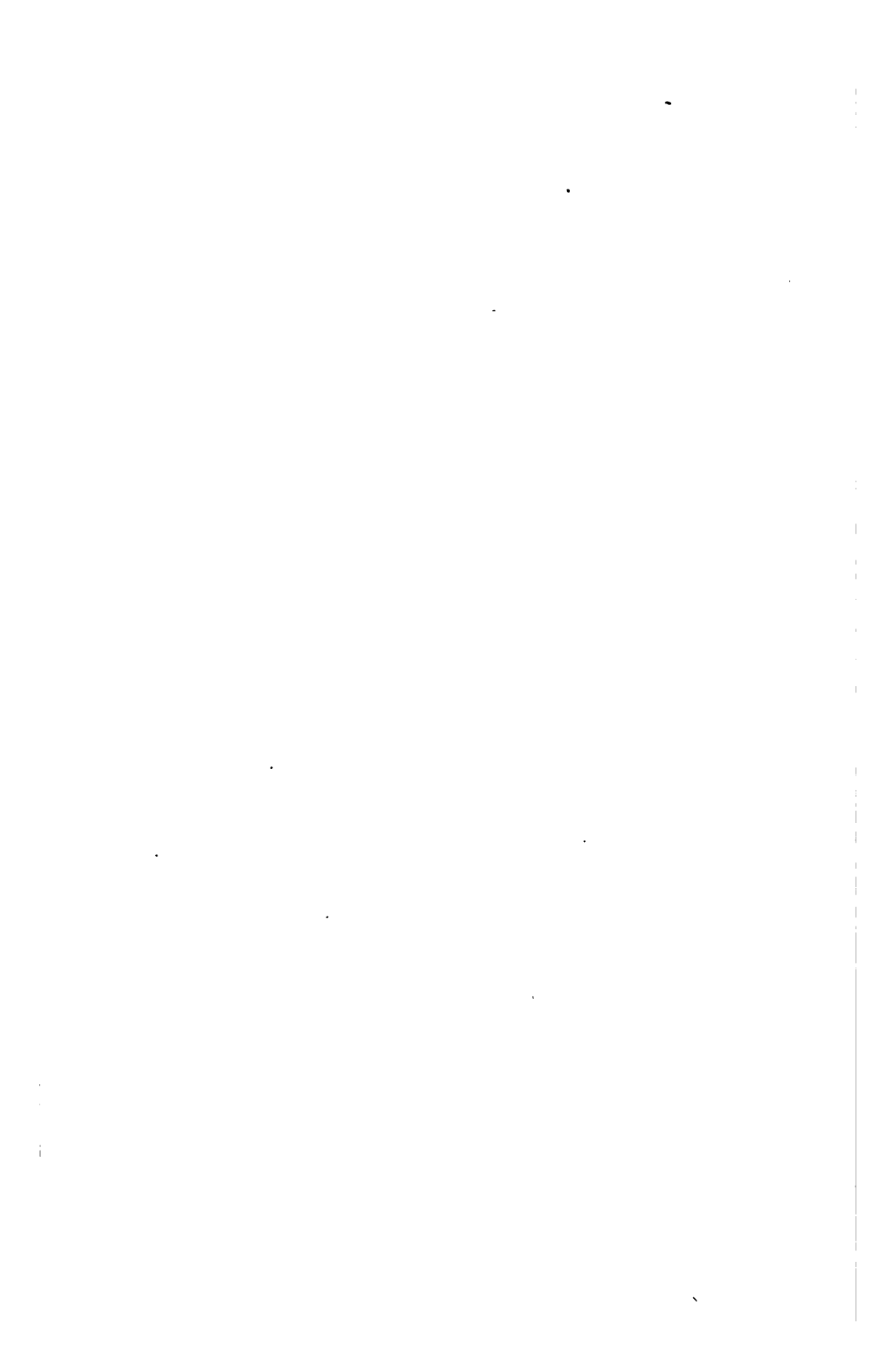
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PREFACE.

THE twelfth volume of the *Journal of the Transactions of the VICTORIA INSTITUTE* is now issued. It will be found to contain papers by the Right Rev. Bishop Cotterill, D.D., to whom the Institute is indebted for one of its most important papers, "dealing with the deepest questions in a way that will carry conviction into the minds of candid and perplexed inquirers, and shake deeply-rooted prejudices which have long obscured intellects of high order;"* Professor Challis, M.A., F.R.S., F.R.A.S. (Plumian Professor of Astronomy at Cambridge); Professor Lias, M.A.; Professor J. L. Porter, D.D., LL.D., whose long residence in the East has placed him amongst those able to deal practically with questions bearing upon its topography; Mr. J. E. Howard, F.R.S.; the late Mr. W. R. Cooper, F.R.A.S., M.R.A.S. (Secretary of the Society of Biblical Archaeology); Mr. S. R. Pattison, F.G.S.; the Rev. Dr. Rule (author of *Oriental Records*); the Rev. Isaac Taylor, M.A.; and the Rev. H. G. Tomkins, M.A. To these, and to others at home and abroad, who have added to the value of the proceedings by contributing to the discussions, the best thanks of the Members and Associates are due.†

* Canon Cook, Editor of the *Speakers' Commentary*.

† The *Journal of the Transactions* contains Papers read at the Meetings, and the Discussions thereon. Before they are published in the *Journal*, the Papers themselves, and the Discussions, are revised and corrected by

It is satisfactory to find the increasing interest taken in the welfare of the Society by those who have joined it; this is the more encouraging, inasmuch as with them rests, in no small degree, the accomplishment of the Institute's objects,—objects, the importance of which is annually becoming everywhere more recognized, as is evidenced by the cordial welcome accorded during the past year to the Society's efforts to extend its operations to the Colonies and the United States: this is very gratifying, as it is an acknowledged fact that the state of thought in new countries has a strong tendency to a shallow scepticism, marked by great mental activity and little deep thought, a wide knowledge of the practical applications of science, and little time for real philosophical study: it is just in such soils that modern scientific scepticism takes root most freely, and where the extension of the organization of a Society whose aim is to promote accurate inquiry rather than conjecture in the work of elucidating scientific truth, is of especial value.

Last year we referred to the desirableness of a thorough inquiry being undertaken, with the aim of gathering from various sources, especially from ancient monuments,* information that would throw greater light upon the earliest days of Chaldean and Egyptian history, an inquiry including careful and systematic exploration in Assyria and Egypt; and it is pleasing to find that in Assyria a commencement has

their Authors, and MS. comments and supplementary remarks are added, which have been sent in by those Home and Foreign Members to whom, as being specially qualified to pronounce an opinion on the respective subjects, proof copies of the Papers have been submitted for consideration. These arrangements, which cannot but add to the value of the Journal, are carried out with a view to the advantage of all, especially Country and Foreign Members, who thus find in the Journal much valuable matter, in addition to that which has come before those actually present at the meetings.

* Upon this subject generally we would draw special attention to two very important papers read by Professors Rawlinson and Tristram at the Church Congress of 1878.

been made by one of the Institute's members, Mr. Hormuzd Rassam. The extent and value of any inquiry, however, demands organization and that many should share in the labour involved.

For some years the Institute has encouraged research bearing upon what is termed the question of the "Antiquity of man";* more than one paper has been read upon the "cave deposits," &c., and much has been done to rid the subject of the results of hasty conclusions and false impressions; the value of the injunction of Mr. J. Evans, F.R.S. (the late President of the Geological Society), to proceed with "caution," has been demonstrated in more than one instance; recently, by the proceedings in the Geological Section of the British Association on the 16th of August, when Professors Boyd Dawkins and Busk withdrew certain important evidence which they had advanced, and which had received many supporters.†

In conclusion, a full reference to the results of scientific inquiry during the past year would be impossible in the small space allotted to a preface, but we cannot forbear referring to one important result of the American observations of the recent total Solar Eclipse, namely—the evidence of the existence of at least one of the intra-Mercurial planets.

F. PETRIE,

Hon. Sec. and Editor.

DECEMBER 31, 1878.

* Age of the EARTH :—Chief Justice Daly, LL.D., President (for 1878) of the American Geographical Society, referring to this subject and a careful collocation thereon of the views of Astronomers, Geologists, and Physical Geographers, said, it was found that there was "a wide diversity of opinion between them upon the question of time—a diversity so irreconcilable as to show that our knowledge is not yet sufficiently advanced to admit of any reliable theory as to the age of the Earth."

† With regard to the bearing of recent Geological discovery upon the

statements of Scripture, more than one paper and discussion referring thereto will appear in Volume xiii. In the meantime the following opinions will not be without their interest to many :—

"We need not, in accepting the Bible narratives of man's creation, repudiate one fact accurately deduced from modern scientific research."—*The late Radcliffe Observer* (R. Main, 1878). *Relig. Hist. of Man*, p. 5. (See also Preface, *Trans.*, vol. xi.)

"Nothing can exceed in truth and grandeur these words (*Gen. i.*) of the inspired historian, * * the most keen-eyed hypercriticism could see nothing to object to."—*Ibid.*, in *Replies to Essays and Reviews*. (See also *Trans.* vol., xi. p. 431.)

"With regard to Physical Science, I think we have seen that its real advances are in favour of Religious Faith."—*Ibid.*, *Trans.*, vol. x. p. 174.

"The language of Scripture neither is, nor can be, * * contrary to the language of Science."—Professor Challis, M.A., F.R.S., F.R.A.S. Plumian Professor of Astronomy at Cambridge. *Trans.*, vol. ix. p. 140.

"The Bible abounds in illustrative references to natural objects and phenomena, * * these are remarkable for their precise truth to nature."—Principal Dawson, LL.D., F.R.S. *Trans.*, vol. ix. p. 173.

"The great discoveries as to the physical constitution and probable origin of the universe, the doctrine of the correlation and conservation of forces, * * these, and many other aspects of the later progress of Science, must tend to bring it back into greater harmony with revealed Religion."—*Ibid.*, in *Origin of the World*. (See also Preface, *Trans.*, vol. xi.)

"There has never been produced in my own mind * * the slightest impression that we (he, and those who studied under him) were considering facts and laws in any way opposed to Christian Faith, to the inferences of Natural Theology, or the deductions from Scripture."—The late Professor Phillips, F.R.S., speaking of his duties as Professor of Geology at Oxford. *Replies to E. & R.* (See also *Trans.*, vol. xi. p. 432.)

"We all admit that the book of Nature and the book of Revelation come alike from God, and that, consequently, there can be no real discrepancy between the two, if rightly interpreted"—Professor G. G. Stokes, M.A., F.R.S., &c., Secretary of the Royal Society. (See Preface, *Trans.* vol. v.)

JOURNAL OF THE TRANSACTIONS
OF THE
VICTORIA INSTITUTE,
OR
PHILOSOPHICAL SOCIETY OF GREAT BRITAIN.

ORDINARY MEETING, MAY 7, 1877.

C. BROOKE, F.R.S., VICE-PRESIDENT, IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following elections were announced :—

MEMBER :—R. W. Bradford, Esq., Sutton.

ASSOCIATES :—Rev. T. R. Robinson, D.D., F.R.S., F.R.A.S., M.R.I.A.,
Director of the Observatory, Armagh ; Rev. Canon C. Lane, M.A.,
Sevenoaks ; Rev. A. G. Pemberton, M.A., London ; Rev. P. D. La
Touche, M.A., Ireland ; M. R. Butler, Esq., London ; J. L. Palmer,
Esq., R.N., F.R.C.S., F.S.A., &c., Birkenhead.

Also the presentation of the following Works for the Library :—

“Proceedings of the Royal United Service Institution,” Parts 89 and 90.
From the Institution.

“Proceedings of the Smithsonian Institution.” *From the Institution.*

“Proceedings of the United States Geological and Geographical Survey,”
Bulletin 4 ; and on the Grotto Geyser. *From the Survey.*

Smaller works from M. R. Butler, Esq., and Rev. G. D. Copeland.

The following paper was then read by the Rev. J. L. CHALLIS, M.A., the
author being unavoidably absent :—

ON THE INDESTRUCTIBILITY OF MATTER. By the
Rev. Professor CHALLIS, M.A., F.R.S., F.R.A.S., Plumian
Professor of Astronomy and Experimental Philosophy in
the University of Cambridge.

IN the title prefixed to this essay I have adopted an ex-
pression, the current signification of which is, that no
existing particle of matter ever will be or can be destroyed.

I think it right to state at the outset that I propose to adduce arguments, drawn both from physical science and from Scripture, which lead to the conclusion that this view of the quality of matter is untrue.

2. Taking, first in order, the arguments which have relation to physical science, I have no hesitation in beginning with the admission that chemical experiments have shown that whatever modifications substances may undergo by analysis or synthesis, and in whatever way different substances may be combined, the quantity of matter as measured, either by the number of the indivisible elements, or by weight, remains unchanged. Such experimental facts seem to have suggested the idea of the indestructibility of matter, and the inference would be perfectly valid if physical science consisted exclusively of what is known by experiment, and if we could learn nothing about matter beyond what experiment teaches. But I shall maintain that this is not a true definition of physical science, inasmuch as such science, when complete, rests not on experiment alone, but on experiment combined with *reasoning*. Experiment may establish *laws*, but science perfected consists in giving *reasons* for laws. The conclusion to which the argument I am about to adduce relative to the intrinsic quality of matter points, wholly depends on this twofold character of physical science, and on the mutual relation of the two parts; but before entering upon the general argument, it is necessary to go through a preliminary discussion of the nature of the *facts* with which we are concerned in physics. These facts are not all of the same kind, but range themselves under two essentially different categories.

3. The last assertion may be exemplified by the following familiar instance. From ordinary experience we know that *sounds*, whether unmusical or musical, are generated by agitations produced in the air: if, guided by experiment, we define the air to be a perfectly elastic fluid substance, pressing always in exact proportion to its density if its temperature be given, and susceptible of no change as to quantity by states of pressure or motion, we can, according to the principles of the science of Hydrodynamics, obtain differential equations, the complete solution of which would be adequate to tell us the consequences which result from certain disturbances of the fluid produced under given circumstances. In particular, we might thus ascertain, in the instances of disturbances which are found to generate *musical* sounds, what are the *laws* of the movements and variations of pressure of the air that produce this effect. It would, in fact, be thereby shown that the movements are *vibratory*, that they are subject to a law of propagation, and that being accompanied by variations of

pressure, they are capable of acting dynamically on the solid organs of the ear, to which they are carried by the propagation. The agitation thus communicated to the parts of the ear immediately acted upon by the aerial impulses, is eventually conveyed, through the auditory apparatus and nerves, to the brain, and there our investigation of the consequences of the initial disturbance comes to an end. It remains, however, to make the remark that this tracing of consequences does not lead up to the *sensation* which all the world calls sound, but is solely concerned with the *material* conditions, antecedent and concomitant, without which the sensation is not *felt*.

4. This distinction, which has a very important bearing on the argument I propose to adduce relative to the destructibility of matter, has been much overlooked both by physicists and metaphysicians, and for some reason, which I do not understand, appears to be with difficulty apprehended. I called attention to it in the Introduction to my work entitled *Creation in Plan and in Progress*, published in 1861, where I have maintained, as I still do, that the sensation of sound is a *fact* of a certain class, but essentially different from the class of the facts, such as the pressure and vibrations of the air, under which, as material conditions, the sound is perceived. Just so, on the reasonable hypothesis that phenomena of light result from agitations of a universal ethereal medium, the sensations of light and colours are entities altogether diverse from the concomitant vibrations of the ether. So, also, the sensations of taste and smell are of a character not to be confounded with the materiality of the conditions under which alone they are felt. In short, it must be admitted, that in physics there are brought before us facts of two kinds, in such manner distinguished from each other, that whereas one kind cannot be dissociated from properties of matter, the other is certainly *not material*. Further, it may be asserted that co-ordinately with this distinction as to essence, there exists such *correspondence* between the two classes of facts that for every variation as to quality or degree in the material conditions, there is an analogous variation in the immaterial sensations, or *vice versa*.

5. The foregoing separation of physical facts into two classes is a necessary preliminary to the argument that will be subsequently unfolded respecting the destructibility of matter. The argument will have to commence with establishing the position, already referred to in sec. 2, that physical science consists of two parts; what is known by experiment merely, and what is derivable from the results of experiment by joining therewith results obtained by theoretical reasoning; and that

to constitute it in its entirety one of these parts is as indispensable as the other. In order to maintain this position completely, it would be requisite to go over the same ground as that occupied by the major part of the paper "On the Metaphysics of Scripture," which I submitted to the Institute on May 1 of last year. For my present purpose it may suffice to recapitulate some of the arguments adduced in that paper, and to cite others by reference to the numbers prefixed to the paragraphs in which they are contained.

6. It will be found that in that communication I have distinguished between the two departments of physics by saying, that one part wholly consists in the discovery of facts and laws by means of experiment and observation, and the other in accounting for the facts and laws by *mathematical reasoning* founded on certain antecedent *premisses*. Reference was made, for illustration, to the scientific labours of Galileo, Kepler, and Newton. It was argued that Newton's calculation of the movements produced by the action of *forces* on material particles, was not possible till Galileo had certified by experiment the parabolic motion of a projectile acted upon by terrestrial gravity. And again, after Newton had discovered how to calculate the effects of an attractive force emanating from a centre (a vast achievement), and had proved abstractedly, on the *hypothesis* that the force diminished with distance according to the law of the inverse square, that a particle of matter under its influence would describe a conic section, the result would have been barren and simply speculative, unless observations, such as those of Tycho Brahé and Kepler, had shown that the elliptic movement was a physical reality. This is an instructive instance of the mutual relation between the parts respectively performed by observation and by theoretical reasoning. It is obvious that we know more about the movements of the planets than could have been gathered from the results of Kepler's labours, because from these alone it was not possible to learn whether, or in what manner, the movements were determined by the action of *force*. Newton's reasoning not only accounted for the elliptic motion, but also indicated that it was *caused* by force acting in an ascertained definite manner: the Newtonian theory of gravitation appears to have exhibited the very first instance of a fact of nature being demonstratively ascribed to a *causative* antecedent.

6*. It is a distinguishing characteristic of the theoretical department of physical science, that the reasoning it requires is always and necessarily founded on *hypotheses*. The reason for this necessity is, that the very purpose of theoretical investigation is to ascertain the truth or untruth of hypotheses

by comparison of results derived from them by mathematics with certified matters of fact. In so far as the results account for the matters of fact, the truth of the hypotheses is established, and an advance is made in physical science. The hypotheses of the theory of universal gravitation are, first, that the force varies with distance according to the law of the inverse square; and, secondly, that it emanates from every particle of matter and acts according to that law on all other particles. The combination of the reasoning of physical astronomy with the data of observational astronomy is considered at the present day to have fully established the truth of those hypotheses. It is sometimes supposed that Newton demonstrated the law of the inverse square. This is true only so far as he gave a proof of it *à posteriori*, that is, by deducing, mathematically, from the hypothesis of that law, results which were found to be verified by facts of observation. It is not possible by any such reasoning as that employed for demonstrating the propositions of physical astronomy to give an *à priori* demonstration of the law of gravity. I do not say that an *à priori* demonstration is not possible; but if it be possible, it must be effected by theoretical reasoning of a more comprehensive order, including, together with the law of gravity, the laws of other physical forces.

7. The department of theoretical science designated above as physical astronomy, is only a limited portion of the whole domain of science that may be comprehended under the terms "theoretical physics." It is, however, a part separated from the rest by the circumstance that the calculations it requires consist in the formation and solution of differential equations containing in the ultimate analysis *two* variables. For assisting the human intellect in extracting from given relations between what is known and what is unknown information respecting the latter, no other general method has been invented than that of forming equations in accordance with the data, and obtaining the desired information by solving the equations. Common algebraic equations, as is well known, are formed so as to express given relations to which a certain number of unknown quantities are subject, and it is proposed by treatment of these equations, according to rules of reasoning, to extract from them the values of the unknown quantities. In order that this may be done, the number of the equations must be equal to the number of the unknown quantities, and by known rules they have to be reduced to a single equation containing one of the unknown quantities. Then the value of this unknown quantity is ascertainable by solving the equation according to certain specific rules, and when this is known, all

the others are derivable from it. It is to be noticed that what is thus found out is an unknown *quantity*. In an analogous manner, the solution of a *differential equation* containing two variables, determines an unknown relation between the variables in the form of an *algebraic equation*, involving the variables together with arbitrary constant quantities introduced by the rules of the solution. This equation expresses the relation that subsists between the variables under every change of their actual values, and is, in fact, the answer which it was proposed to obtain by forming the differential equation. It was virtually by this process that Newton proved that the form of the orbit of a planet is given by the equation of a conic section. By having the arbitrary constants at disposal, the abstract solution may be made to apply to an actual instance. For example, a few observations such as those which Kepler employed to determine the form of the orbit of Mars, would suffice to fix very approximately the arbitrary constants in the analytical solution, and thereby obtain that equation of the planet's elliptic path which Kepler deduced with so much labour from a very large number of observations. In physical astronomy we have often to deal with equations involving more than two variables; but in such cases the number of the variables is always one more than the number of the equations, so that the several equations are reducible to a single one involving only *two* of the variables.

8. But in physical science problems come before us of such kind that the single differential equation to which the several differential equations formed to express the given conditions of a proposed question are reducible, contains not fewer than *three* variables. The problems I refer to relate to phenomena of *light, heat, electricity, and magnetism*. The analytical solutions of equations that contain three or more variables, and the applications of the solutions in answering questions of the above-mentioned classes, constitute an advance in physical theory of the same kind as that which was made when the solutions of equations containing two variables were applied in physical astronomy. But on account of the greater comprehensiveness of the equations, and complexity of the conditions which their solutions have to satisfy in order to account for experimental facts, the answers to these questions are attended with difficulties, which, hitherto, can only be said to have been partially overcome. It is certain, however, that if physical science be something more than the certifying of facts and laws by experiment, and if, in order to be complete, it must be capable of accounting for experimental facts and laws by reasoning based on definite and intelligible principles, there

is no other course by which it can advance towards perfection than by improved methods of solving and interpreting the solutions of partial differential equations. As in the case of physical astronomy, *hypotheses* have first to be made (see sec. 6*), differential equations have to be formed on the basis of the hypotheses, these equations have to be solved, and the solutions brought into comparison with the data of phenomena proposed for explanation. In proportion as special facts, or facts grouped under formulated laws, are by this process accounted for, the hypotheses are proved to be true, and our knowledge of the natural operations whereby phenomena are produced, is augmented.

9. I have already, in secs. 13-29 of my Paper on "The Metaphysics of Scripture," indicated the principles which, according to the Newtonian philosophy, regulate the hypotheses of theoretical physics. The most important governing principles are, first, that the essential or ultimate qualities of matter and force are such as can be fully understood from *personal sensation and experience*, and, in the second place, that qualities which are proper to be made the basis of theoretical calculation cannot themselves be quantitatively variable, or expressible in numerical terms, because it is the very purpose of theoretical inquiry to account for all facts and laws so expressible. Accordingly, the law of the inverse *square*, as involving a numerical term in its expression, ought to admit of being accounted for theoretically. This point will be adverted to farther on.

10. After these preliminary considerations, I am prepared to state in distinct terms the *hypotheses of theoretical physics* which will be adopted in the subsequent general argument. They are simply these:—

I. All matter that we are cognizant of by our senses is composed of discrete atoms.

II. An atom is a very small sphere, inert, movable, and of finite and invariable magnitude.

III. All *active* physical force is pressure upon the atoms of visible and tangible substances by a uniform and indefinitely extended ethereal medium, itself atomically constituted, and pressing always and everywhere in exact proportion to the number of its atoms, conceived to be all of the same size, in a given space, or, what for brevity will be called, "its atomic density."

These hypotheses have been adopted in conformity with *a priori* principles enunciated by Newton at the beginning of the third book of the *Principia* and in its concluding paragraph. It is not

pretended that Newton either did state, or, considering the deficiencies of mathematical and physical knowledge in his day, could have stated, the axioms of natural philosophy in exactly the foregoing terms; but the views propounded in the portions of the *Principia* referred to, and especially what he has asserted, in the Third Rule of Philosophizing, to be "the foundation of all philosophy," are in perfect accordance with the three kinds of hypotheses above defined, and, I may say, have to a great extent suggested them.

11. Before proceeding to inquire by what arguments the truth of these hypotheses may be established, it must first be settled that they conform to the two regulative conditions stated in sec. 9, according to which they must be perfectly intelligible from sensation and experience, and must not involve any assertion expressive of variation or degree. With respect to the first hypothesis, since we know by common experience that masses can be broken up into parts, and these parts into smaller parts, and so on, it is quite conceivable that all bodies may be composed of very minute parts, and it is not inconceivable that there may be a limit to the divisibility into parts. Thus to say that matter is composed of *atoms* properly so called, is an intelligible assertion, apart from and prior to any evidence that such is its composition. And the further assertion that matter is composed of *discrete* atoms, that is, atoms with intervening spaces, is alike intelligible.

12. Again, when it is said of an atom, that it is a very small inert sphere of invariable magnitude, there is nothing in this definition which is not perfectly intelligible from sensation and experience; for from sensation we can perceive what inertia is in masses, and thence infer what it is in their component parts (see sec. 15 of "*Metaphysics of Scripture*"), and by the senses of sight and touch we can understand what is signified when an atom is said to be a sphere of invariable magnitude. Thus the atom, as above defined, is conformable to *both* the regulative principles laid down in sec. 9.

13. With respect to the third hypothesis, the definitions of the ether and of the mode of its pressure on the atoms involve no postulates that are not perfectly intelligible from what we know by experience of the dynamical properties of air of given temperature. And as to the quality of *pressure*, it suffices in this philosophy to appeal to the fact that we *feel* what it is when we press with the hand against any solid substance. (More will be said on this point in a subsequent part of the essay.) It might, however, be urged that inasmuch as the third hypothesis assumes that the pressure of the ether is always and everywhere proportional to its atomic density, it

implies that the density and pressure admit of *variation*, and consequently violates the second of the regulative principles stated in sec. 9, according to which a primary hypothesis must contain nothing expressive of variability. An explicit answer may be given to this objection. The two hypotheses which precede the third affirm conjointly that all matter consists of an aggregation of inert spherical atoms, of invariable magnitude, susceptible of motion, and separated from each other by intervening spaces. Hence it is a direct *inference* from the antecedent hypotheses, and not a new hypothesis, to say that matter may be conceived of as composed of atoms in different degrees of aggregation, or that the number of atoms of a given substance in space of given dimensions may be different at different times and different positions. This inference may consequently be logically employed in the enunciation of the third hypothesis, which assumes not only that the ether *presses*, but that the pressure is always and everywhere in exact proportion to its atomic density. This last assertion is certainly a *primary* hypothesis, and as such is required to be conformable to the same regulative principles as the other primary hypotheses. Now the mathematical expression of this hypothesis affirms that there exists, under all circumstances of the motion and density, an invariable numerical quantity by which, if the variable numerical quantity expressing the atomic density be multiplied, the product is the numerical quantity expressing the pressure. Hence as the quality of pressure, and the variability of atomic density, may, from what is said above, be legitimately assumed in stating the third hypothesis, it follows that this hypothesis only postulates the existence of that *invariable* factor, and consequently, as being also expressed in intelligible terms, it may be pronounced to be conformable to rule. Mathematical investigation founded on the hypothesis has shown that the constant factor signifies that the fluid is endowed with a *constant intrinsic elasticity*, in virtue of which it has the property of pressing, and also of propagating the effect of any agitation produced in it at a constant rate through space.

14. In addition to being conformable to the rules above indicated, the hypotheses are required to satisfy the condition of giving the means of instituting *theoretical calculation*, by the results of which, compared with observation and experiment, their truth may be tested. Their applicability and sufficiency for this purpose in all the different departments of physics will accordingly have to come under consideration in the sequel of our argument.

15. Before proceeding farther in the general argument, it

will be proper to remark that hypotheses proposed for physical inquiry are adapted to meet every demand that may be legitimately made upon them, if they are expressed in terms rendered intelligible by sensation and antecedent experience; and if they consist only of definitions and postulates which involve no variable elements, and on that account are suitable for being made foundations of theoretical calculation. Presuming, as I think I may for the reasons already given, that the adopted three hypotheses do in fact fulfil those conditions, I am entitled to disregard any mere expression of disapproval of them, whether wholly or in part, inasmuch as their claim to acceptance is to be tested, and can only be established, by comparison of results obtained from them by *mathematical reasoning* with certified facts. Any arguments, however, bearing upon the validity of such reasoning, I am bound to take notice of, and, to the best of my ability, shall endeavour to answer.

16. It will be also worth while to advert here to a mode of philosophy advocated in the present day, which is directly opposed to the *rules* of philosophizing laid down in Newton's Principia. It appears that some of my contemporary physicists absolutely refuse to accept the method of conducting physical inquiry by means of *à priori* hypotheses, although (as has been argued in secs. 6-8), Newton adopted this process in his theory of universal gravitation; and also gave rules for applying an analogous method to account theoretically for the laws which govern the various kinds of relation between matter and force. This opposition to the Newtonian *à priori* principles of philosophy comes mainly from the advocates of views such as those which are developed in the work entitled *The Unseen Universe*. I propose, therefore, as contributing to the purpose of this essay, to state briefly what I conceive to be the origin and character of those views, and why they are incompatible with the Newtonian philosophy.

17. The principles of physical philosophy as respects the ultimate qualities of matter and force, which were so well pounded at the epoch of Locke and Newton, were in a short time set aside by the admission of hypotheses not conformable with the Newtonian rules of philosophizing. In particular, it was assumed that two portions of matter in presence of each other mutually attract, in virtue of *intrinsic* force resident in an unintelligible manner in each, and acting in an unintelligible manner through the space between them. Newton distinctly repudiated this hypothesis. It was so framed that while it allowed of ascertaining the *law* of the mutual action as depending on the distance between the bodies, it precluded all inquiry

as to any extraneous cause of such action, or as to the reasons for its being attractive rather than repulsive. Taking advantage of the defect of knowledge respecting the *modus operandi* of gravity necessarily incident to an early stage of physical science, Hume made the gratuitous assertion that in philosophy we have nothing to do with *causes*, but only with *laws* of sequence of phenomena, and that such laws are fixed and immutable. This doctrine was maintained, or involved, in most of the writings of succeeding metaphysicians, and some of those of Germany even sought to prove, by metaphysical argument, that "the action at a distance" is a necessary truth. It is not to be wondered at that the prevalence of such views should have had the effect of promoting attention to the *empirical* part of philosophy, which is concerned only with facts and laws, as certified, either directly or by mathematical inference, by experiment, to the exclusion of *theoretical* philosophy truly so called, which accounts for facts and laws by mathematical reasoning founded on intelligible hypotheses. This tendency of modern empirical philosophy to put aside true and ultimate theory is conspicuous in the work above mentioned (sec. 15), and seems to have determined in great measure the character of its contents. That I have ground for saying this will appear from the following quotation taken from the sixth page of *Lectures on some Recent Advances in Physical Science*, by Professor P. G. Tait, one of the authors of *The Unseen Universe*. He there asserts that "physical science, in order that advances may be made in it, is to be based entirely on experiment, or mathematical deductions from experiment. There is nothing physical to be learnt *à priori*. We have no right whatever to ascertain a single physical truth without seeking for it physically" (meaning, I suppose, experimentally). Accordingly in this empirical system, there is entire silence respecting the hypotheses which Newton considered to be the foundation of all philosophy, and mathematical calculation for determining on the principles of hydrodynamics the motions and *pressure* of the ethereal medium, is persistently avoided. Yet there is actually no contrariety between these two aspects of physical philosophy—the one just as much as the other being dependent for its establishment on observation and experiment. They are, in fact, related to each other in the same manner as are observational astronomy and physical astronomy, the latter of which derives its foundation and reality from the other. The author of the above passage is clearly not aware that empirical philosophy is only a step towards true and ultimate philosophy, and that physical science is really *advanced*, only so far as the physical laws discovered and formulated by means

of experiment are shown by mathematical reasoning to be consequences of ulterior intelligible principles. The perfection of physical science consists in giving reasons for physical laws.

18. In order, farther, to exhibit the antagonism of the philosophy of *The Unseen Universe* to that of Newton, I quote as follows from Art. 139, page 107 (1st ed.):—"After inertia, which is not accounted for by any of the hypotheses as to the ultimate nature of matter which we have just given, the most general property of matter which we recognize is that of universal gravitation." This assertion can, I think, be only understood as meaning that gravity is a property of matter in the same category as inertia; whereas Newton says, at the end of his Third Rule of Philosophy, that he by no means affirms gravity to be essential to bodies, that he takes *vis inertiae* to be the only intrinsic ("insita") force, and that this force is invariable ("immutabilis"), whilst, on the contrary, gravity diminishes with increase of distance from the earth. (These views accord with the rule I have adopted in sec. 11, of not admitting qualities susceptible of variation to be primary, which rule, of course, excludes gravitation from the class of primary qualities.) It is right, however, to take into consideration that although these authors speak of gravitation as a "property" of matter, they fully assent to Newton's dictum respecting the unreasonableness of the assumption of action at a distance without intermediate agency (*U. U.*, Art. 140, p. 109). But the acceptance of Newton's authority in this particular, which is hardly consistent with their treatment of his philosophy in other respects, is followed by a statement of various suppositions made to account for gravitation, which appear to be of an extremely speculative and arbitrary character. Preference seems to be given to the agency of "ultra-mundane corpuscles, in infinite numbers, flying about in all directions with velocities enormously great." These corpuscles are supposed to rain freely on the interior particles of masses, and by their impacts to produce the effect of gravitation. It is a peculiarity of the phase of philosophy I am referring to, to substitute for pressure, as ordinarily understood, the effect of the impacts of an immense number of exceedingly minute particles. Thus Professor Tait, in page 324 of the before-cited Lectures, says, "One of the results arrived at as to the motion of swarms of impinging particles is, that in a mass of hydrogen at ordinary temperature and pressure, every particle has, on an average, 17,700 millions of collisions per second with other particles—that is to say, that number of times in every second it has its course changed. And yet the particles are moving at a rate

of something like 70 miles per minute." But it is admitted that this flying about of particles does not do work properly unless it be supplemented by "*guidance*" applied to some of the particles by the finite intelligence of certain "demons" (*U. U.*, Arts. 111-112, pp. 87-89). Added to all this, Professor Sir William Thomson says that we are to conceive of these particles as being simple, or involved "vortex-rings," which are strictly *atoms*, because having the property of "wriggling" they cannot be *cut* (*U. U.*, Art. 133, p. 103). This conception of the form and qualities of the atom is derived solely from the solution of a hydrodynamical problem by Helmholtz, from which, in the opinion of Professor Thomson, there results vortex-motion of so absolutely unalterable a character that if the atom be taken to be a vortex-ring, an argument might thence be deduced "in favour of the eternity of ordinary matter." (See *U. U.*, Art. 152, p. 118.) Having for many years bestowed particular attention on hydrodynamical questions, I might, if the occasion permitted, dispute the validity of this interpretation of Helmholtz's solution, and, at all events, call in question the applicability of his reasoning to determine the ultimate form and destination of matter. But it will suffice for my present purpose only to remark that a system of philosophy which arrives at the qualities of the atom by means of an abstruse piece of mixed mathematics is utterly at variance with the Newtonian rule of defining an atom in terms intelligible from *the common sense* and experience of mankind, the reality of the hypothetical atom being left for decision by an adequate number of comparisons of results obtained by mathematical reasoning based on this and related definitions with matters of fact.

19. The foregoing exposition of the character and results of this novel scheme of physical philosophy will, I hope, enable members of the Institute interested in these questions to form a judgment of the weight to be given to views which the upholders of such philosophy may express in opposition to the argument with which I am about to follow up the preceding introductory considerations. For my part, I have no hesitation in saying, that, according to my judgment, the arbitrary speculations detailed above, and the inferences drawn from them, go quite beyond the limits of sober philosophy. Now it may be asserted that the course taken by these physicists is avowedly a departure from the Newtonian abstract principles of "Natural Philosophy," the adoption of which forms an essential part of my argument. Hence, since it appears that mathematical physicists of undoubted ability, who have rejected those principles, have been conducted by a course of empirical reasoning

to results such as it is impossible to accept, I feel all the more assured of the correctness of the process of *a priori* reasoning I have entered upon, and accordingly I shall carry on the argument to the end, without having further regard to the adverse views of empirical theorists.

20. Having now shown that the three hypotheses in sec. 10 are proper for being employed as a basis of theoretical investigations conducted by mathematical reasoning, and having also argued that empirical theory derived immediately from experiment, being contributory to the establishment of ultimate theory resting on true *a priori* hypotheses, cannot be contradictory to the latter, I proceed, in the third place, to inquire whether it can be *proved* that the three hypotheses constitute *a true and adequate foundation of a general physical theory*. Very important consequences, relative to the material universe, follow from an affirmative answer to this inquiry. Now it may be taken for granted that the only possible way in which the answer can be reached, is to accept the hypotheses as foundations for applying mathematical reasoning in the several departments of physics in conformity with their respective definitions, and then to test numerical values obtained relatively to given phenomena by means of the theoretical calculation, by comparisons with numerical values relative to the same phenomena obtained directly by experiment. Moreover, the answer cannot be completely given till the test has been fully applied in *every* department of experimental physics. To contribute towards making progress in this large field of inquiry has been the professed object of my mathematico-physical researches during many years. Before adverting to the results arrived at, it will be proper to direct attention to a special dynamical quality pertaining to the atom, and essentially involved in those researches, which hitherto I have not expressly taken into consideration.

21. According to definitions in secs. 10-12, the hypothetical spherical atom is not susceptible of change, either as to form or magnitude; in other words, it is capable of unlimited *resistance* to pressure applied to its surface. This quality of the atom is particularly objected to by those physicists whose views of the relations of matter and force are professedly derived entirely from experiment, since, as it seems, they are unable, on that account, to admit that solid matter can be devoid of *elasticity*, yielding in greater or less degree to compression. But, according to our philosophy, this property cannot be included in the definition of the ultimate atom, because it involves *variability* as to form or condition, and is consequently the result of force acting according to laws,

which have to be accounted for by reasoning from ulterior principles. It is, however, true that to attribute to the atom the quality of unlimited resistance to change of form is, in fact, to postulate the existence of a *real* physical force, distinct from that which is supposed, in hypothesis III, to be resident in the ether. The latter is an *active* force; the other is simply *reaction*, called into operation only so far as the surface of the atom is pressed by the ether. The theories of the different kinds of physical force, and of their laws, which I have proposed in various scientific publications, depend in an essential manner on the *co-existence* of this force of reaction at the surfaces of atoms with the active force of the ether. Similarly the force of gravity causes a planet to move in an elliptic orbit, only in consequence of the co-existing passive resistance to change of the direction and amount of the motion, which is due to the planet's *vis inertiae*; the resistance to change of the motion being an actual intrinsic quality of the atom, analogous to its hypothetical intrinsic quality of resisting change as to form.

22. It remains to consider by what reasoning it may be ascertained whether the three hypotheses are true or false. I have already said that the only possible process is to compare results mathematically deduced from them with quantities derived from experiment, for the purpose of determining whether the calculated quantities are in such accordance with the experimental values as the verification of the hypotheses demands. By a known rule of philosophy, a large number of accordances will only establish a presumption of the truth of an hypothesis, whereas a single instance of positive contradiction is conclusive proof of its being untrue. It would extend this essay to an unreasonable length to cite all available instances of such comparisons, for the purpose of estimating the amount of evidence they give of the truth of the three hypotheses; I can do no more than refer for the evidence in full which has been brought to bear on this inquiry, to the various discussions of physical problems contained in my published philosophical writings. There is, however, one characteristic of these hypotheses which may be considered to be important evidence of their truth, and may suitably be treated of here; namely, the facility with which, although few in number, they admit of being applied in the whole range of experimental physics. This point, as giving *prima facie* proof of the *adequateness* of the hypotheses to constitute the foundation of physics, is dwelt upon at considerable length in my paper on "The Metaphysics of Scripture," especially in secs. 24-28, and, consequently, I do not think it necessary to go

over this ground on the present occasion; but a few items of evidence, which more especially appear to strengthen the main argument, I propose to introduce here.

(1.) In sec. 5, reference has already been made to the hypotheses of the Theory of Universal Gravitation, which I shall now enunciate again for the purpose of expressing the second one in more definite terms. (a.) The force of gravity varies according to the law of the inverse square of the distance; (b.) it is universal as to the extent of its operation, and emanates from *every elementary portion* of visible and tangible substances. It is *not* assumed, in the theoretical calculations, that the force emanates from every *atom*, inasmuch as a vast number of atoms, in a state of aggregation, may be supposed to be contained in the space-element usually adopted in calculating the effects produced by the force which emanates from a given substance of given finite dimensions. Now as these two hypotheses are quantitatively expressed, it is a necessary consequence, according to the principles of our philosophy, that they should be deducible from its *a priori* hypotheses. I have, in fact, shown, on the supposition that every atom is a centre of ethereal vibrations by reason of the reaction at its surface, that the undulations, resulting from the composition of the minor undulations propagated from all the atoms of a given small element, are capable of acting as an accelerative force on a distant atom, attracting it towards the element, and that this attractive force varies inversely as the square of the distance from the centre of the element. The universality of the force follows from the hypothesis of the unlimited extent of ether. In my early researches, I could not decide whether or not the fact of the equal acceleration of all bodies by the force of gravity was due to the elements being composed of atoms all of the same size; but at length I succeeded in demonstrating on hydrodynamical principles that the gravity-undulations had the effect of accelerating equally atoms of different sizes. (The investigations here referred to are given in an article on the Hydrodynamical Theory of Attractive and Repulsive forces, contained in the Number of the *Philosophical Magazine* for September, 1876.)

(2.) By a well-known experiment Gauss proved that the action of a large *magnet*, having its axis fixed, upon a small one restricted to oscillate about its middle point fixed, in a plane passing through the axis of the other, is, for the same distance between the middle points of the magnets, *twice as great* when the axis of the large magnet is directed towards the middle point of the small one, as when the axis of the latter is directed towards the middle point of the large one, and that

in both cases the magnetic action varies very nearly inversely as the *cube* of the distance between the centres of the magnets. I have accounted for both these laws by means of a hydrodynamical theory of magnetism founded on the same *a priori* hypotheses. (See the *Philosophical Magazine* for July, 1869, p. 42.)

(3.) The Astronomer Royal has given in vol. clxii. of the *Philosophical Transactions* the results of an experiment for determining the intensity and direction of the action of a galvanic coil on a small magnet placed in various positions round the coil, and restricted to oscillate, with its middle point fixed, in a plane passing through the axis of the coil. On the principles of hydrodynamical theories of *galvanism* and *magnetism* resting on the same basis, I have been able to account for the laws of this action, and to make a successful numerical comparison of theoretical values, giving the direction and intensity of the galvanic force, with values obtained directly from the experiment. (This problem is discussed at length in the Numbers of the *Philosophical Magazine* for September, November, and December, 1874.)

(4.) Much interest has recently been excited by the phenomena of Mr. Crookes' Radiometer, which have been supposed to give indication of the existence of a *new* physical force. It might, therefore, reasonably be asked whether the proposed general hydrodynamical theory of the physical forces was competent to explain these phenomena. On making application of it, I was led to conclude, without adding to, or deviating from, in any particular principles previously admitted, that the action of light on the surfaces of the vanes induces, in combination with the law of heat-exchanges always in operation between neighbouring bodies, an abnormal disposition of the superficial atoms not unlike that produced in electrical experiments by friction, and that in consequence of the inequality of this action on the opposite black and bright surfaces of the vanes, steady ethereal currents are generated (just as in the hydrodynamical theory of frictional electricity), the pressure of which on the individual atoms causes the movement of the vanes. An experiment by Mr. Crookes which showed that a pith ball, suspended near the revolving vanes in a cup inclosing the Radiometer and very nearly exhausted of air, was made to oscillate if the rotation was not very rapid, seems to justify the supposition of an electric action. (I have treated of the theory of the Radiometer in the numbers of the *Philosophical Magazine* for May and November, 1876, and April, 1877.)

It may here be mentioned, as peculiarly confirmatory of the

actuality of the hypothetical atom, that the foregoing explanations, numbered (1), (2), and (3), depend wholly on the assumption of its *spherical* form.

23. Although I cannot expect that the foregoing arguments will produce in others the degree of conviction which, after long attention to theoretical philosophy, I have myself arrived at as to the truth of the three hypotheses, still, as it may possibly be conceded that a presumption of their truth has been established, the course of the general argument now requires a statement to be made of the inferences deducible from these hypotheses on the supposition of their being true; which accordingly I proceed to do.

(1.) First and chiefly, they prove the existence of *two* classes of natural facts quite distinct from each other, one primary, the other derivative. The first class are primary in the sense of not being logically ascribable to any antecedent natural cause, whereas the other, whether consisting of individual facts, or of facts related in a manner expressed by analytical formulæ, may be logically reached by reasoning from the first as premisses. Such reasoning reveals the laws which govern the second class of facts. *Laws* so determined are absolutely unchangeable, because the process and the results of right reasoning from given premisses admit of *no variation*, being the products of a human faculty which in essence is identical with the supreme reason of the Governor of the Universe. But it by no means follows that the premisses themselves are also unchangeable. For want of being able to distinguish between the two kinds of facts, Hume fell into the great error of assuming that *all* facts are subject to immutable laws. This error has held its ground up to the present day, its influence being conspicuous in the writings of Stuart Mill, Strauss, and modern metaphysicians generally, who have all rightly judged that metaphysical inquiry should be conducted with reference to physics, but failed to discern the exact relation between the two departments of human knowledge. The late Professor Grote of Cambridge discerned the unsatisfactoriness of the prevailing views of metaphysicians on this point, but did not profess to clear up the difficulty.

(2.) As the existence of the primary facts is not referable to any antecedent natural conditions or causes, it may be asked, What was their origin? How did they begin to be? The only possible answer to this question is, that they were *made*, and made to be such as they are, by the sole will and power of the Creator of the Universe. We ourselves can *make*, and we give to the things we make special forms and qualities to answer special purposes. We may draw, therefore, from our

own consciousness the conclusion that the Creator *formed* the atoms and the ether from the beginning, assigning to them the qualities, and disposing them in the order, which by His wisdom He foreknew to be adapted to give rise through the exertion of His power to laws of operation whereby His purposes in the creation would be fulfilled. It seems to me not too much to assert that in making the primary entities such as to be intelligible to us through sensation and experience, and the laws of operation such as to be deducible from the primary facts by human reasoning, the Creator purposed that, together with other ends, His creation should have the effect of revealing to *man* His wisdom, power, and Godhead.

(3.) It is surely reasonable to admit that the Creator of the primary entities and Disposer of their mutual relations, retains for exercise, when for special purposes it seems good to Him, the prerogative of changing existing conditions in respect to the number, magnitudes, and arrangements of the atoms (without alteration of essential qualities), and that too whether the substance be inorganic or organic. It must be fully admitted that to do this is to work a *miracle*. At the same time it may be maintained that in so doing there is no violation of *laws*, but only change of conditions under which established laws operate. It will thus be seen that the recognition in our philosophy of two kinds of facts frees it from that antagonism to the admission of miracles which forms so prominent a feature in much of the philosophy accepted at the present time.

(4.) I come now to the conclusion of the general argument. If the foregoing course of reasoning has sufficed to certify that matter must have come into existence by the will and operation of a personal and intelligent Creator, by the same reasoning it is proved that matter is *destructible*, inasmuch as a power that created it can destroy it, and if it be indestructible, it could not have been created. This is an axiom so self-evident that there is no way of sustaining it by argument. I leave to those who maintain the indestructibility of matter, the task which their position imposes upon them of proving that it was not created.

24. The preceding inferences from the three hypotheses have immediate relation to the quality of *matter*. Others are deducible from them with which the quality of *force* is intimately concerned. Before mentioning these, it is necessary to recall to notice the reasoning in secs. 2-4. It is there argued that in physical science we have to do with *immaterial* as well as material facts, and that the former are perceived only in co-ordination with the other kind. This view was exemplified by

reference to the sensations of sound and light, the intrinsic characters of which our mathematical researches make no approach to, although we can thereby obtain very distinct conceptions of the material conditions under which they are felt. They *coexist* with, and *correspond* to, these conditions, solely by the will and power of the Creator. Now, according to the third hypothesis, all active force is resident in the ether, and by the argument in sec. 13 it is shown that, besides atomic constitution, all that is predicated of the ether is, that it is endowed with a *constant elastic force* as a *primary* quality. It would, therefore, be a contradiction in terms to say that this quality results from antecedent material conditions: we can only say of it that it is an *immaterial* concomitant of the existence of a material ether, just as the immaterial sensation of sound accompanies certain movements of the material organs of hearing, and that of light certain movements of the material organs of seeing. Thus, in short, the constant force of the ether is the result of immaterial, or *spiritual*, agency. For this reason we might with propriety call that force the *energy* of the universal ether, this term having already an established usage relative to mental or spiritual operation.

25. The truth of the foregoing inference may, I think, be confirmed by the following considerations. Assuming that all active force is exerted by means of the ether, it must be by the same medium that force is exerted when of our own will, under conditions and limitations of organization, we move our limbs, or set in motion any extraneous body. But in this case our own consciousness tells us that the exertion of the force is a mental or spiritual act. (See sec. 13.) We may hence draw the general conclusion that the quality of the constant force pertaining to the ether is, as was said above, spiritual. This force—this constant and universal energy—is power of God, “who is a Spirit,” a share of which power He communicates under conditions either of organization, or of external natural phenomena, to voluntary agents, to men or to angels; but still it is His power. “In Him we move,” as is said in Scripture.

26. In sec. 21 a distinction has been drawn between the active force resident in the ether, and the passive forces pertaining to the atom, namely, its *vis inertiae* and its unlimited *resistance* to change of form. What, it may be asked, is the essential character of these forces? It can only be answered that they exist as primary, and therefore underivable, qualities, immediately imposed and maintained by the power of the Creator of the atom; and, being inseparable from it, may be called innate or *inherent* qualities. According to the philosophy of Mr. Herbert Spencer, the non-annihilation of matter means

that "the force a given quantity of matter exercises, remains always the same." But this assertion does not take account of any distinction between one kind of force and another. As far as regards the passive forces above mentioned, inasmuch as these are *inherent* in atoms, it may well be admitted that the non-annihilation, or the annihilation, of the force and the matter must go together. But since, as I conceive, it has been shown that matter is destructible, it follows that *this* kind of force, apart from the active force not in like manner attached to the atoms which constitute visible and tangible substances, may come to an end. I cannot forbear adverting here to an analogy of much interest between the modes of operation by which the Governor of the Universe effects His purposes in His natural kingdom and in His spiritual kingdom. As was said in sec. 21, natural effects are produced by the antagonistic tendencies of active and passive forces, and by the prevailing of the former over the other. So also, it would seem, in the existing economy of God's spiritual kingdom, the powers of good and evil are antagonistic, until by the eventual subduing of the latter, the final purpose of the spiritual creation is accomplished. Possibly the conception of such an analogy may have given rise to the idea, so long and so widely entertained, of a connection between matter and evil.

27. I beg to take this occasion to say that the philosophy which I have now and before advocated, is utterly opposed to the *Agnosticism*, which, in recent publications, has been so much insisted upon. I think that some defenders of Scriptural truth have given great advantage to sceptical writers by the admissions they have made respecting the unknowable. For myself I do not hesitate to express the view (already maintained in part in this essay), that the Author and Ruler of the world purposely ordered His works and His ways, both in the natural kingdom and the spiritual kingdom, so that they may be understood by intelligence such as ours, and may consequently communicate to us a knowledge of *Himself*. This belief accords with the philosophy taught by the Apostle Paul, where he says, "that which is known (τὸ γνωστόν) of God is manifest in them (ἐν αὐτοῖς); for God hath showed it to them. For the invisible things of Him from the creation of the world, are clearly seen, being understood by the things that are made, even His eternal power and Godhead" (Rom. i. 19, 20). In agreement with the apostle's words, "manifest in them," I have made reference, in the course of argument, to information derivable from *personal consciousness*.

28. I propose to conclude this essay with taking account of an argument, drawn from the assumed indestructibility

of matter, which has been employed to give a reason for the perpetuation of *personal identity*. It has been thought that the identity of an individual may, supposing matter to be indestructible, be continued after death and the dissolution of the body of the present life, by the entrance of a single particle of that body into the composition of the risen body of the life to come. The physical philosophy I have been endeavouring to explain, which makes an absolute distinction between the immaterial and material parts of man (see sec. 24), and admits the destructibility of matter, points to the dependence of whatever is perpetuated on the immaterial—the spiritual. The same result is arrived at by considering what takes place in *perfect sleep*: consciousness departs, the body is there, the *Ego* is not there; I am as if I were not. If, then, the body, in its integrity, is incapable of maintaining continuity of consciousness, how should there be, in a very small portion of it, the virtue to maintain continuity of person? The teaching of Scripture appears to be, that the Creator of spirits has in His keeping the spirit of every man departed, to the end that, when united after resurrection to “spiritual body” (not the *same* body), it may give account of the deeds done in the body of flesh, whether good or bad. It is by this relation of deeds now to judgment then, that the power of God ensures personal identity. For these reasons, I do not admit that it is allowable to assume matter to be indestructible, in order to account for the maintenance of personal identity. “If our earthly tabernacle-house were dissolved, we have a building of God, a house not made with hands, eternal in the heavens” (2 Cor. v. 1).

The CHAIRMAN.—Our thanks are due to Professor Challis for the valuable paper with which he has favoured us.

Mr. T. HARRIOT.—I think that Professor Challis has somewhat mixed up the spiritual and the material in one section of his paper. Let us not forget that whilst St. Paul says that God may be known to man by His works in the natural world, He also tells us that the natural man cannot know the things of the Spirit of God, because they are spiritually discerned.

The CHAIRMAN (C. BROOKE, Esq., F.R.S.).—I very much regret that Professor Challis was not here to-night, to read his own paper; because, though I am entirely in accord with him in regard to the drift of it, which, in fact, is contained in the paragraph on sec. 23, 4th part, to the effect that,

“If the foregoing course of reasoning has sufficed to certify that matter must have come into existence by the will and operation of a personal and intelligent Creator, by the same reasoning it is proved that matter is *destructible*, inasmuch as a power that created it can destroy it, and if it be indestructible, it could not have been created. This is an axiom so self-evi-

dent, that there is no way of sustaining it by argument. I leave to those who maintain the indestructibility of matter, the task which their position imposes upon them of proving that it was not created."

This, in point of fact, appears to me to be the gist of the paper, and in this, I am sure I am entirely in accord with the author. But there are several points in the argument about which I should like to have asked him for some information. In the same page (sec. 24) he says—

"According to the third hypothesis, all active force is resident in the ether."

It must be apparent to any mind, that this ether has an altogether hypothetical existence. We know nothing about it. We never can see, feel, test, or weigh it. In fact, we have no evidence of its existence beyond the necessity for the existence of some exceedingly elastic matter, to convey from the sun, the vibrations which constitute light and heat, to this earth. We know that some highly-elastic matter must exist and fill the whole of space between us and the sun, in order to convey the light and heat so essential to the development of life on the earth. But beyond this we know nothing about it. In the next page the author says—

"It must be by the same medium that force is exerted, when of our own will, under conditions and limitations of organization, we move our limbs, or set in motion any extraneous body. But in this case our own consciousness tells us that the exertion of the force is a mental or spiritual act."

Now, it is quite clear to my mind that the mental act, that is, the act of volition, is an antecedent cause to the exertion of the force. The exertion of the force is the contraction of the muscular fibres, the muscular fibres that move the arm, for instance; the contraction of these fibres is the immediate agent in the exertion of the force. This certainly is a material, and not a spiritual, act. The antecedent volition is the spiritual act; but it appears to me the exertion of the force is not a spiritual act.

Mr. CHALLIS.—The Professor goes beyond the muscles, and speaks of that which puts them in action.

The CHAIRMAN.—He does not say it in so many words, but I conclude from section 4, that he considers—and in this I entirely agree with him—that sound, as well as light and heat, have no objective existence; that sound, light, and heat are entirely subjective sensations, and that all that exists objectively is the vibratory motions. In sec. 10, with regard to the laws he propounds, the first is, "All matter that we are cognizant of by our senses, is composed of discrete atoms." The second is, "An atom is a very small sphere, inert, movable, and of finite and invariable magnitude." Now, it appears to me that the assumption that the form of an atom is a sphere, rather involves more difficulties than it obviates, because by the laws of crystallization, the form of crystals necessitates that there should be unequal attractive forces between the molecules and the substance of the crystal, one or two, sometimes three unequal—sometimes in

two, sometimes in three different directions ; and it appears to me more easy to conceive that these unequal forces should exist in a molecule which is of unequal dimensions in its different directions ; and it would be very easy to conceive that the form of the molecule is not a sphere. But, at the same time it is not a matter of great consequence, for, according to the Newtonian hypothesis, when the space between particles of matter is indefinitely large, compared with the magnitude of the particles themselves, it does not matter what we suppose the form to be. It appears to me rather more comprehensible that the forms are different in those atoms in which there are necessarily different attractive forces in different directions. I daresay the Professor would have given us some reason for superseding the view I have just enunciated. At the bottom of sec. 18 he speaks of the Newtonian expression, *vis inertiae*. It appears to me that the consideration of *inertia* as a force, tends only to mystify and confuse our ideas in regard to what force means. Force, as commonly defined, is that which tends to alter the condition of a body with respect to its state of rest or motion. Now, if this be the correct definition of the term force, clearly *inertia* does neither one nor the other.

Mr. CHALLIS.—He speaks of it as a quality.

The CHAIRMAN.—As a force.

Mr. CHALLIS.—As reaction (in sec. 21).

The CHAIRMAN.—He quotes Newton, and says :—

“ He by no means affirms gravity to be essential to bodies ; that he takes *vis inertiae* to be the only intrinsic (‘ insita ’) force, and that this force is invariable (‘ immutabilis ’), whilst, on the contrary, gravity diminishes with increase of distance from the earth. (These views accord with the rule I have adopted in sec. 11, of not admitting qualities susceptible of variation to be primary, which rule, of course, excludes gravitation from the class of primary qualities.) ”

Mr. CHALLIS.—I think that is discussed further on, where he speaks of it simply as a quality of resistance.

The CHAIRMAN.—It does appear to me that it is an unfortunate expression of Newton’s ; to call *inertia* a force, confounds our ideas of force altogether.

Mr. CHALLIS.—I think the Professor in using that term does not adopt it in speaking of action, but only in speaking of re-action.

The CHAIRMAN.—Then with regard to gravitation, he speaks of gravitation as a variable force. I think this again is a little looseness of language, because how do we estimate our measure of force ? We estimate it by its action on a unit of matter at a unit of distance. Now that is constant. The amount of gravitation will depend upon the distance. The force of gravitation I maintain to be constant and uniform, because we can only measure it by its action on a unit of matter at a unit of distance.

Mr. CHALLIS.—He speaks of it as not being a primary quality or fact, because it may be measured.

The CHAIRMAN.—Because it is variable.

Mr. CHALLIS.—Because it is quantitative.

The CHAIRMAN.—The action is quantitative. The question is, is the force quantitative?

Mr. CHALLIS.—I do not think there is any ground of objection there. The action of gravity, as due to the ether, is a step beyond the action measured experimentally.

The CHAIRMAN.—Then, with regard to the idea that is expressed in this paper,—with regard to the force being entirely due to the ether,—it seems to me the idea conveyed is that, in gravitation, the tendency of bodies to fall together in consequence of the force of gravitation, depends, not on the bodies themselves, but on their being pushed against each other by the force of this hypothetical ether. This appears to me the gist of the hypothesis.

Mr. CHALLIS.—It results from the application of mathematics to that ether, as it is defined.

The CHAIRMAN.—The difficulty appears to me that, granting that ether, and granting these molecules impinging in countless multitudes and with immense velocity upon the particles of matter, I do not see why they should impinge on one side more than another; and if they impinge on all sides alike, it seems to me that would have no effect at all. I do not see why the supposed impact of molecules should tend to bring the particles together.

Rev. J. FISHER, D.D.—Professor Challis has made some good points against the authors of the *Unseen Universe*. I think the three hypotheses which he lays down as the foundation of a general physical theory are all sound and good. With regard to the atom, although we have never seen one and never shall, his argument is of the highest degree of probability. Then as to his different classes of facts, physical science consisting not only in experiment but reasoning, the one giving laws, the other reasoning from laws, I think that is a point he brings out very clearly. As to the two classes of fact, primary and derivative, I think that is very clear and plain; as also are a great many other points. There are some things at the end of the paper with which I do not fully agree; for instance, where he says he leaves those who do not like his argument to prove the negative. Now we cannot call upon any one to prove a negative. The name of the essay is "On the Indestructibility of Matter." But he has only one sentence about that, while he goes on to prove the creation of matter. Having done that satisfactorily, he says the other is of small importance. He has proved the creation, and it is very good proof too, but I think he would have done well to have brought out the other a little more clearly.

A VISITOR.—I think there is one point of considerable importance which has not been touched upon. Professor Challis says in his paper,

"If the foregoing course of reasoning has sufficed to certify that matter must have come into existence by the will and operation of a personal and intelligent Creator, by the same reasoning it is proved that matter is destructible, inasmuch as a power that created it can destroy it."

I think we should agree with this. I think it is the main argument of the paper, that matter does possess what the Professor calls primary qualities, which are being impressed upon it in a way we cannot account

for, and which are one great evidence of their being created at all. But he goes on to say, "If matter be indestructible, it could not have been created." I should like to see this point cleared up. "This," he says, "is an axiom so self-evident that there is no way of sustaining it by argument." I think we are in a very unfortunate position when we do not see the truth of an argument that is said to be self-evident, and when the men who bring it forward decline to argue with us. Now I think some strong reasons have been put forward that matter is not destructible; and what I want to know is, whether it does follow, if matter is proved indestructible, that it never could have been created? I think we can go to the analogy of the spiritual in man. We hold that our spirits are immortal—having been made in the image of God we are immortal; and whether we are saved or lost, we shall continue to exist. Does it follow, because this is the case, that we never were created? I do not think we should be willing to admit that. And it seems to me a very conceivable thing that God, who, according to the showing of this paper, has apparently endowed certain material atoms with what are called primary qualities, such as qualities of elastic resistance at their surfaces, may have endowed them with other qualities, with the power of indestructibility. It does not, to my mind, seem to be a logical sequence to say, even if it can be proved, that as matter is indestructible therefore it never could have been created. I know the difficulty of some, in regard to the existence of the Creator, lies here. They accept that which is stated to be true, that matter is indestructible, and then they say, what Professor Challis says, if it is indestructible, it never could have been created, and therefore we have no reason to believe in a Creator. I would say in answer to this difficulty, what I have just suggested, that it is possible for the Almighty with His infinite powers to endow matter, as He could endow spirit, with the quality of indestructibility. I think we have only these three alternatives. We must admit matter to be destructible, on the proof of the Professor saying that God, having created it, can destroy it; or we must say, what seems to me the truth, if this is not the case, it may have been endowed with the quality of indestructibility and yet have been created; otherwise, it seems to me we are left to that very dismal belief, that matter, being endowed with indestructibility, was never created at all, and therefore we have no grounds for believing in a Creator.

Rev. J. L. CHALLIS.—As Professor Challis will have an opportunity of replying, I will only observe, in reference to what has just been said, that the Professor refers to the will of the Creator as the ultimate cause of all things, by saying that He who originated everything can alter or take away. That is to my mind a complete answer to objections implying limitation of Divine Power. And I think the Professor is quite right in leaving those who maintain the indestructibility of matter to prove that it was not created. Again, the same reference to the will of the Creator is an answer to the remark about our own immortality. It is not that our spirits are immortal because the Creator has made them indestructible, so that He

Himself cannot destroy them, but they are immortal by the will of the Creator, and indestructible by the will of the Creator; and we have no right to say that He could not change them. It is declared to us in the Scriptures that our spirits are immortal, and that is sufficient. It is so by the will of the Creator, and nothing that is said in this paper affects this conclusion. The argument rather shows that they and all other things are ultimately the outcome of the will of the great Creator of all things.

The Meeting was then adjourned.

REPLY BY PROFESSOR CHALLIS.

HAVING received a printed copy of the report of the foregoing discussion, and perceiving from the remarks and questions of the speakers that on several points it was desirable I should give further explanation, I shall avail myself of the permission given me to supplement the discussion by some remarks in reply, to introduce such additional considerations on those points as may appear to be required.

Not knowing what section of the paper Mr. Harriot refers to in saying that I have "somewhat mixed up the spiritual and the material," I can only answer generally that with respect to distinguishing between what is spiritual and what is material, or between invisible things and things that are objects of sense, I think that I have only said what is in accordance with the doctrine taught by St. Paul in Rom. i. 19, 20, which passage is quoted in sec. 27. In 1 Cor. ii. 14, where the Apostle speaks of things which the natural man cannot know, because they are spiritually discerned, it seems, from what he says in verse 12, that spiritual discernment in its moral rather than in its intellectual sense is signified.

I am much gratified by the Chairman's assertion of his entire accordance with me with respect to the views contained in the passage which he quotes from sec. 23 (4) of the paper, and I quite agree with him in considering the main drift of my argument to be conveyed by the inferences drawn in that passage. If, notwithstanding this expression of assent to my views, I have thought it right to advert to some particulars in Mr. Brooke's subsequent remarks, it is because he has himself asked for further information on certain points, and because I think that a discussion of the points he has referred to will tend very much to elucidate the question of the destructibility of matter.

Mr. Brooke cites from sec. 24, "According to the third hypothesis, all active force is resident in the ether," and then proceeds to remark that "This ether is an altogether hypothetical existence. We know nothing about it. We never can see, feel, test, or weigh it. In fact, we have no evidence of its existence beyond the necessity for the existence of some exceedingly elastic matter to convey from the sun the vibrations which constitute light and heat

to the earth. We know that some highly elastic matter must exist and fill the whole space between us and the sun, in order to convey the light and heat so essential to the development of life on the earth. But beyond this we know nothing of it." To these remarks I reply as follows: It is the very principle of my argument to begin with regarding the ether and its qualities as "altogether hypothetical." But remembering Newton's rule of not making gratuitous suppositions "contrary to the tenour of experience" and "the analogy of nature," I take account from the first, in making the hypotheses, of the same ground of necessity as that adduced by Mr. Brooke for assuming the existence of some highly elastic matter by means of which light and heat are conveyed to us from the sun. So far, therefore, I can perceive no difference between Mr. Brooke's views and mine, excepting that I give a specific name to the elastic substance, and call it *ether*. I admit, however, that from this point I proceed to make particular hypotheses respecting the ether, as, that it presses, and that its pressure is always proportional to its density. Now these hypotheses are justifiable, *as hypotheses*, on the ground that they give the means of testing the reality of the ether and its assumed properties, by being appropriate foundations of mathematical reasoning for deducing results that may be compared with experimental facts. There are departments of physical science in which advance can be made only by proceeding according to this method of *hypotheses*. And although by such a method the hypotheses are not absolutely *proved* to be realities, a moral certainty that they are such is established in proportion to the number and the variety of the explanations they give of phenomena. Since, in my opinion, the mathematico-physical science of the present day has established a moral certainty of the reality of the ether, and of its being such as for the purpose of theoretical research it is assumed to be, I am unable to admit that, because we cannot apply experimental tests to it as we do to other material substances by seeing and handling them, we know nothing about it. It is true that we can never "see" it, because, being the means by which grosser bodies are seen, it is itself invisible. I think Mr. Brooke is hardly consistent in saying that we never "feel" it, because he admits (second page of Discussion) that sound and light are subjective sensations; and since we may be said to feel the air in our sensation of sound, we may with as good reason be said to feel the ether in the sensation of light. We have not the power, neither have we any need, to "test" its presence by seeing or handling it, inasmuch as the lightning flash, and the distant star, attest its presence near us, as well as in the remotest regions of space. We cannot "weigh" it, because, being the cause of all weight, it is itself imponderable.

With reference to the assertion in sec. 25, that "it must be by means of the ether that force is exerted when of our own will, under conditions and limitations of organization, we move our limbs, or set in motion any extraneous body," Mr. Brooke remarks that, "the act of volition has an antecedent cause to the exertion of force." I agree so far with this view as to admit that volition, by whatever cause determined, is antecedent to the

exertion of force ; but an "act" of volition I should consider to be, giving effect to will by action on matter, in conformity with that inscrutable relation between spirit and matter, whereby we have the power to move material substance, and can thus give overt evidence of our volition. Supposing this power to be exerted by the intervention of the ether under certain conditions of nerve and muscle, just as, in a well-known experiment, the limb of a dead frog is moved by a galvanic current of ether, it must still be regarded as a faculty immediately bestowed by our Creator, enabling us, when we please, to originate and bring into action the same physical conditions as those under which the motion in that experiment is produced. I can assent to Mr. Brooke's statement, that when a limb is moved, "the contraction of the muscular fibres is the immediate agent in the exertion of the force" ; but at the same time, as was correctly affirmed by my son, Mr. Challis, in the course of the discussion, the views I advocate "go beyond the muscles." In sec. 21 of my paper on "The Metaphysics of Scripture" I have enunciated the following principle : "It is inconceivable that there can be any production or event which is not determined by antecedent will, and by the power, in operation, of a conscious agent." The adoption of this principle precludes the admission that the exertion of muscular force can be correctly called a "material act," or that in any case there can be exertion of force which is not a *spiritual act* followed by its material manifestation. Volition is the necessary antecedent of every manifestation of force, and consequently, as volition is an attribute of spirit, every exertion of power is a spiritual act.

Mr. Brooke's next argument, which is directed against the assumption of the spherical form of the atom, is very nearly the same as that which I have met in the last paragraph but one of the Supplementary Reply attached to my paper on the "Metaphysics of Scripture" (Journal, Vol. XI. p. 246), where I make a distinction, apparently overlooked in that argument, between a molecule and an atom. The polarity of the crystallographical forces being referable, according to my view, solely to the *arrangement* of the atoms which constitute a molecule, I have no occasion to make hypotheses respecting the *form* of the atoms in order to account for it. Mr. Brooke now adds to the former argument the assertion, that if "the Newtonian hypothesis," according to which the spaces between the particles (? atoms) are very large compared to the spaces occupied by the particles themselves, be adopted, "it does not matter what we suppose the form to be." Although this might be granted so far as regards the phenomena of polarity above mentioned, it might still be maintained that there are other phenomena which essentially depend on the form of the atom. The spherical form is one of the primary hypotheses of the mode of philosophy I advocate ; and, as stated at the end of sec. 22, I have, in fact, accounted for various physical phenomena by mathematical reasoning founded on the supposition of this form, and have thus established a reasonable presumption of the reality of spherical atoms.

With respect to Mr. Brooke's objection to the Newtonian expression, *vis*

inertia, I have only to remark that if the thing itself be understood from sensation and experience, it matters not whether it be called *inertia* or *vis inertia*. In secs. 15 and 21 of the paper before cited (*Journal*, Vol. XI. pp. 202 and 204), I have endeavoured by a familiar instance to make intelligible the fact and the quality of *inertia*, and have given reasons for concluding that "the reality of inertia as a quality pertaining to bodies is recognizable by a sense of personal effort." Probably the feeling that *inertia*, although not an active force, is something to be overcome by force, and the natural inference that what force overcomes is itself force, may have given rise to the expression *vis inertia*. I am aware that some eminent experimentalists have been indisposed to accept "*inertia*" as a philosophic term; but the theoretical calculator knows that he cannot proceed a step towards forming his equations of force without taking into account the intrinsic quality of matter which this term expresses.

Thinking that it may be expected of me to advert to the discussion which took place between the Chairman and Mr. Challis relative to the quality of the force of gravitation, I beg to make the following remarks on that question. Let it be granted that the unit-measure of the gravitating force of any mass is "the action [*? moving force of the mass*] on a unit of matter at a unit of distance," and that this measure is "constant and uniform," there still remains to be considered the noteworthy fact that the quantity of the gravitation of the *same* mass has to this standard measure a ratio which is different for every different distance from the mass. The circumstance of this variability in space is expressly adduced by Newton as the reason that gravity is not, as inertia is, an intrinsic quality of matter. This quantitative variation of gravity is precisely analogous to the difference of effect produced on the ear by the sound of a bell at different distances from the spot where it is sounded. In this instance we know that the variation arises from the sound being transmitted by the propagation of divergent waves of the air. Just so in the proposed theory of gravity, waves of the ether, superior in order of magnitude to those which produce heat or light, are supposed to emanate from all the parts of masses, and to produce an attraction varying in its effect on external bodies according to the law of the inverse square of the intervening distances. To make this argument good, it is necessary to prove that the vibrations of an elastic medium constituted like air of given temperature, are capable of drawing bodies towards the parts from which the propagated vibrations emanate. This I consider I have succeeded in doing in the communication which is referred to at the end of sec. 22 (1) of the present paper, as being contained in the *Philosophical Magazine* for September, 1876. The reasoning which conducts to this result depends essentially on the definition of the ether given in the third of the hypotheses enunciated in sec. 10. It is true, as Mr. Brooke has remarked, that, according to this view, bodies are "pushed" towards each other by the force of the hypothetical ether; but it is not correct to say that this force "does not depend on the bodies themselves," inasmuch as the gravity-waves which produce the effect have their origin in the bodies. Mr. Challis justly urged

in reply to the Chairman's objections, that the consideration of "the force of gravity, as due to the ether, is a step beyond measuring its action experimentally," and that the pushing of the ultimate parts of bodies by the action of the ethereal waves is a "result deduced from the application of mathematics to the ether [and atoms] as defined."

It only remains for me to take notice of the Chairman's concluding remarks, which seem to have been made under the misapprehension that the proposed theory of the cause of gravity involves the supposition of "molecules impinging in countless multitudes and with immense velocity upon the particles of matter." I have never in any of my writings given the least countenance to this hypothesis, which, on the contrary, I look upon as having no foundation in reason, and as having been gratuitously made for the purpose of evading the consideration in physics of such *pressure* as is commonly understood from sensation and experience. I am quite in accord with Mr. Brooke in his opposition to this way of accounting for gravity, and, adopting his words, can say that "I do not see why the molecules should impinge on one side of the particles more than another, and, if they impinge on all sides alike, how they should have any effect; nor do I see how the supposed impact of molecules should tend to bring particles together." In short, I cannot but regard this arbitrary hypothesis as a *retrograde* step in physical philosophy, fit only to be classed with Descartes' vortices, and far less excusable, inasmuch as Descartes had not, as we now have, mathematical and physical knowledge adequate to the treatment of such a question as the *modus operandi* of gravity. I have, in fact, for a long time maintained that the character and laws of *all* the physical forces, as ascertained experimentally, admit of being accounted for by the application of modern analytics to the Newtonian principles of natural philosophy, and, in particular, by means of mathematical reasoning so applied, I have been led to a conclusion which, in page 468 of my work on the "Principles of Mathematics and Physics" (published in 1869), is expressed in these terms:—"There are no circumstances under which the forces of nature can act *differentially* on two neighbouring atoms to such a degree as to overcome their mutual repulsion; and, consequently, the collision of atoms is an impossibility." It is to be understood that this repulsion is caused by pressure on the surface of each atom due to ethereal waves propagated from the other, and, as varying in some inverse ratio of the distance between their centres, is enormously increased by approach of the atoms towards each other. I think that I need not say more to show how utterly opposed my view of the cause of gravitation is to this hypothesis of "swarms" of impinging molecules.

In response to the Rev. Dr. Fisher's desire for a fuller statement of my reasons for regarding the proof of the creation of matter as involving the proof of its destructibility, I am prepared to give the following explanations, which, I admit, were not uncalled for. In the Epistle of St. Paul to the Galatians (ii. 18) there occurs the following remarkable passage: "If I build again the things which I destroyed I make myself a transgressor." These words, in which the first person is employed impersonally, signify that any

one who has the power to unmake and make the same things, to do and undo, or, as would be said in modern phraseology, is a *free-agent*, is the author of his own transgression. Although the Apostle has not used the word "free-agent" (it would have been surprising if he had done so), he expresses in concrete terms what may be considered to be a definition of free-agency, namely, that it consists in the power to perform actions which are the exact contraries one of another. Now, since free-agency must certainly be predicated of the omnipotent Creator of all things, it follows from this argument that the power to create implies the power to destroy, that what is created is destructible by the power that created it. Thus the proposed proof of the creation of matter, if valid, is a proof of its destructibility, or a *disproof* of its indestructibility. It is on this ground that I say, "If matter be indestructible, it could not have been created." See what is farther said on this point in the next paragraph.

The remarks of "A Visitor" are in part answered by what has just been said in reply to Dr. Fisher; but certain of his arguments require to be specially taken notice of. He says, "I think some strong reasons have been put forward that matter is not destructible," and then asks "whether it follows, if matter is proved indestructible, that it never could have been created?" Certainly it follows, if my argument be good, that if matter should be *proved* to be indestructible, its non-creation is also proved; but for the following reason I deny the possibility of such proof. The "strong reasons" alleged, as above said, for regarding matter as not destructible, rest, I presume, on experimental evidence, respecting which I have admitted (sec. 2) that it is capable of establishing the indestructibility of matter as a *law*. But it must be considered that while it is within the power of human intelligence to discover natural laws, it is the prerogative of the Creator to originate the laws, and that (by the argument in the preceding paragraph) the power that gave them existence can *abrogate* them. For this reason the proof of absolute indestructibility of matter is *not possible*, although it may be possible, by arguments which prove that it was created, to prove that it is destructible. Consequently, of the "three alternatives" "A Visitor" proposes, I adopt the first. With respect to the argument he derives from the immortality of spirit, I agree with Mr. Challis in the view that created spirits are immortal, or indestructible, not by any originally bestowed virtue or principle, but by the ever operative will and power of their Creator, who, as He made them and fashions them, can, if He will, destroy them. With respect, however, to this question, it is to be considered that, according to Scripture, our Creator has *promised* that in the "new heavens and new earth" that are to be created, righteousness, which is the basis of spiritual life, shall "dwell," and consequently assurance is given that the life of spirit will indeed be "indissoluble" (Heb. vii. 16), inasmuch as "it is impossible for God to lie" (Heb. vi. 18), or cease to fulfil His promise.



Fig. 5.



Fig. 1.

*Fig. 1.
inserted elsewhere.*



Fig. 2.



Fig. 3.



ORDINARY MEETING, MARCH 6, 1876.

C. BROOKE, ESQ., F.R.S., VICE-PRESIDENT, IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following elections were announced :—

MEMBERS :—C. J. Bentley, Esq., F.S.A., London ; Rev. G. Straton, B.A., Leicester.

ASSOCIATES :—The Hon. H. M. Best, London ; J. A. Macdonald, Esq., London ; Rev. T. A. McKee, Dublin ; Rev. K. M. Morrow, Shaftesbury.

Also the presentation of the following Works to the Library :—

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| "Proceedings of the Royal Society," Part 166. | <i>From the Society.</i> |
| "Proceedings of the Royal Geographical Society," Part 2. | <i>Ditto.</i> |
| "Proceedings of the Smithsonian Institute, 1874." | <i>Ditto.</i> |
| "Proceedings of the United States Geological and Geographical Survey," Bulletin 6. | <i>From the Survey.</i> |
| "Light as a Motive Power," Vol. II. By Lieut Armit, R.N. | <i>The Author.</i> |

The following paper was then read :—

THE HORUS MYTH IN ITS RELATION TO CHRISTIANITY.—By W. R. COOPER, F.R.A.S., M.R.A.S., Hon. Sec. Biblical Archæology.

THERE are few points on which the Egyptian and Christian religions so nearly analogize, and which are more striking in their resemblances, than that one doctrine which has always been regarded, and rightly so, as a special result of revelation,—the doctrine of a Vicarious Deliverer of mankind in the person of a mysterious Being, who is at once both very God and very man. The definite language of the Nicene Creed, and its commentary, the symbol of St. Athanasius, explains the nature and attributes of the founder of our religion, and it is my province, as far as I am able to do so, to show to-night in what degree that nature and those attributes were anticipated in the Egyptian dogma of Horus *Nets*, the only-begotten son of his father—the Deliverer of Mankind from the Evil One. Perhaps you will allow me, before I proceed to examine my subject, to remove a little misapprehension which may arise in your minds as to the manner in which I shall treat it, and the standpoint from which it will be viewed, since the topic is one to Christians of the most serious interest, and one which has formed the foundation of a variety of heretical exposi-

tions in the first three centuries of our era, and has been overlaid with a mass of pseudo-science and philology by the sceptical writers of the earlier part of this. There are, I take it, then, in all religions, and notably in the oldest, certain fundamental truths which were derived from a primeval revelation,—fundamental truths which have in some theologies been neglected, in others lost sight of, in a third misunderstood, and in a fourth perverted and corrupted. In the depths of His infinite mercy, we are told, that the Supreme Being left not Himself without witness in the world,*—such a witness, for example, as is afforded by the science of natural theology,—and He revealed to the earlier civilizers of mankind certain salvatory truths, the full elucidation of which He reserved for the ages to come. Hence it follows, that as in all ages there were those to whom He was pleased to reveal Himself and to teach His word, there must always have existed among the traditions of the human race the remembrance of those elementary doctrines which were derived from what was really the pre-patriarchal church; but hence, also, it by no means as necessarily follows that those traditions should be based upon a revelation made known only to the Jews as the descendants of Abraham, since, if we were to require such a postulate, we should have to deduce our arguments from creeds which arose among nations having had subsequent contact with the Jews; and that position in the case of the ancient Egyptians would be utterly untenable; rather, instead, would I base my argument upon this hypothesis therefore, that long prior to the time of Abraham the cardinal dogmas of the Church were known to the nations of the world, and that it was reserved to the Father of the faithful and his descendants to hold and to transmit to us the whole of those dogmas in their integrity; but that even to the Jews themselves the full import of their own articles of faith was not fully known, while isolated doctrines, which were held in common by them and by other nations, were expanded to a degree which the patriarchs never understood, and which in some points anticipated, so far as these expansions arose from the conscious yearnings of the soul after God. the tenets of Christian revelation. Do not, I pray you, think, me tedious in these prefatory remarks, for, singular as some of the Egyptian doctrines are, which I shall presently examine, they were all held in the land of the Pharaohs centuries before the call of Abraham or the birth of Moses. Place the period of Abraham where you may, that of the XIIth Egyptian Dynasty must precede it; the arrival of Jacob and his family cannot have been earlier than the XVIIIth, and the expulsion of the

* Acts xiv. 17.

Exodus than the XIXth dynasties. Therefore the compilation of the Pentateuch must be posterior to the time of Rameses II.; * although certain integral portions may be, nay, undoubtedly are, infinitely older, and the *Ritual of the Dead*, which dates from the IVth Dynasty,† and the *Litanies of the Sun*, which are found in the XIIth Dynasty, must be the oldest theological texts in existence.‡ There is this most important consideration, however,—the rubrics and commentaries upon these, and the beautiful mystical hymns which form so large a part of the ancient hieroglyphic literature, are of a more recent period, and were the subject of continual recensions and additions; so that while the essential parts of the myth of Horus mount up to the period of the Great Pyramid, the oldest of Egyptian buildings; the expositions and adaptations of that myth descend as low as to the grand temple of Edfu, which was erected by Cleopatra Cocce and Ptolemy Euergetes II., and was only completed by Augustus Cæsar.

I bring before you a collection of facts illustrating points of belief dating from the highest antiquity, and I present you with a problem which arises from them, to which is added a theory, such as it is, in explanation. On my own *ipse dixit*—I a young man, and a still younger scholar—it would be ridiculous more than presumptuous to ask you to receive either facts or corollaries; it is to be hoped, therefore, that you will examine these materials for yourselves. Indeed, so open to question do some of the positions advanced seem to be, and so singular—almost dangerously singular—are the inferences which arise from them, that if I thought the HORUS MYTH would remain in obscurity I should certainly not have ventured upon an analysis of it now; but since I well know that that cannot be the case, since the results of Egyptian philology and the

* The date of the reign of Rameses II. is fixed by the heliacal rising of the dog-star; so this occurring in his twelfth year, this astronomical cycle is fixed for B.C. 1311 (Biot).

† Cap. lxiv., *The Manifestation to Light*, "The Chapter of Coming Forth as the Day." This is attributed to the period of King Gaga Makheru or Menkera.—Birch, *Bunsen's Egypt*, vol. v. p. 142.

‡ The Solar litanies, or the Litany of Ra, are chiefly found on the sarcophagi and on the walls of the tombs of the Ramesside monarchs in the Biban el Moluk, and they are therefore of a late period as regards the texts which we now possess. They breathe the spirit of a pure Pantheism, Ra being regarded as the deity from whom all things came, to whom all things return, and in whose essence all mankind are to be absorbed.—See Naville, *La Litanie du Soleil*. Paris, 1876.

"From whose eyes mankind proceeded,
Of whose mouth are the gods."—

Hymn to Amen Ra, *Records of the Past*, vol. ii. p. 132.

discovery of fresh texts are bringing into notice the primeval dogmas of the world, of which the Horus Myth is one of the most prominent ; since the origin of many of the Egyptian rites and beliefs must soon become the cause of a steady controversy, which, if not taken up by a friend, would perchance be disingenuously misrepresented by an enemy; since these things are so, it seemed pardonable to me, despite all defects, to bring forward the subject, even as the key-note in an orchestral piece is not generally given by the leading instrument ; and also that I should delay no longer in compiling this paper, lest the pressure of increasing engagements, and still more seriously, a feeble frame of body, should unexpectedly prevent me from reading it at all. Now, therefore, let me approach the task which I have almost too rashly undertaken.

Among all the Egyptian deities there is not one which fills a more important place in the whole Pantheon, no, not even Osiris or Amen Ra himself, than the benevolent deity Horus. He was almost the sum and substance of all the theology of the older Pharaonic faith. He was considered as holding many of the most contradictory offices ; as having a most mysterious origin ; as uniting himself most intimately with mankind ; as having a triple nature and a double personality ; as being capable of veneration under a variety of names and attributes ; and, alone of all the divinities, retaining his pre-eminent position, even in the times of the Set cultus of the Hykshos invasion, and the disk-worship of the heretic Khu-en-aten, or, as he is better known, Amenhotep IV.

The three chief characters of Horus, under which he was most frequently represented in the monuments, and by which he was referred to in the hieroglyphic texts, were, I., Horus Ra, or the Sun, as the vivific soul of the world, and of all things wherein there is life ; II., Horus *Teti*, the conqueror, and the avenger of Osiris, in which he was the eternal antagonist of spiritual and physical evil ; and, III., Horus *Nets*, the Deliverer,* in which he was the vicarious deliverer from evil of the Egyptian deceased, and the justifier of the righteous. Besides these three chief deifications, there were two other forms of godhead assumed by him also ; viz., Hor-Hut, or the Good Spirit, and Horus Khem, the god of generation. In all these forms he had a different series of honorific titles and distinctive epithets, which were continually blending into one another, and which, especially in the later texts, were often used indiscriminately.

Horus *Ra*, the Sun. According to the Egyptian philosophical belief, all life, animal, human, vegetable, and even divine, was

* "Horus *nets* your soul," is a usual phrase on the papyri (Birch).

derived directly from the sun itself; the life of the gods by emanation, the life of men by creation, and the life of plants by germination. The whole cosmos, active or passive, lived only by the actual presence of the sun; and hence, in some places, the solar deity, or Horus Ra, is assumed to be equivalent to Nature itself. The life of man, being the positive gift of the sun,* was symbolized by that great luminary's course in the heavens, whether in his intangible essence as eternal light, or in his personification as Horus; each manifestation of the sun was considered as a separate deity, not intrinsically but officially distinct. As the rising sun, Horus was the child of Isis, the material heavens, and also of Nu, the goddess of the mysterious ocean, out of which the sun arose, and into which he descended on his way to illuminate the under world, or Hades.† As the sun in its horizon, Horus was called Harmakhu, and was symbolized by the mysterious human-headed couchant lion, which is generally called a sphinx. The very fact of that colossal rock-cut statue, which now exists in Egypt under that name, having been wrought in honour of Harmakhu before the time of the IVth Dynasty, attests the great antiquity of the solar identification of the Horus myth.‡ As the setting sun, Horus was called Tum, or Atum, in which characteristic he was identified with the great source of life to the souls of the under world. As the deity of the actual solar disk, pure and simple, Horus was regarded as Aten Ra, and in all these, and a variety of other minor manifestations, Horus was termed in the *Ritual* and *Litanies*, "the Lord of Life, the God creating himself," and "the Eternal One," epithets which were further applied to him in his other offices and personifications also.§

The *Ritual of the Dead*, that most ancient and most mysterious

* See Deveria, *Cat. des Manuscrits Egyptiens du Musée du Louvre*.

† See Pierret, *Dictionnaire d'Archéologie Egyptienne*, art. *Horus*.

‡ "Completed, if not commenced, under the reign of Shafra (Chephren), of the second Pyramid."—Lenormant, *Manual of the Ancient History of the East*, i. p. 331.

§ "Le personnage d'Horus se rattache sous des noms différents à deux générations divines. Sous le nom d'Harôeris ou Horus l'Aîné, il est, nous dit une inscription d'Ombos, né de Seb et de Nout, et par conséquent frère d'Osiris, dont il est le fils sous un autre nom : Harôeris représente ainsi la pré-existence divine.

"Sous le nom d'Harpocrate, né d'Isis et d'Osiris, il est le successeur de ce dernier et symbolise l'éternel renouvellement de la divinité. Osiris est le Dieu Suprême dont la manifestation matérielle est le soleil et dont la manifestation morale est le bien. Le soleil meurt, mais il renaît sous la forme d'Horus, fils d'Osiris et soleil levant. Le bien succombe sous les corps du mal dont Set est l'incarnation, mais il renaît sous la forme d'Horus, fils et vengeur d'Osiris Unnefer, l'Être bon."—Pierret, *Salle Historique Musée du Louvre*.—See also final note.

production of the Egyptian priests, is filled with the spirit of the Horus myth throughout. In the chapter of the Metamorphosis,* Osiris is addressed thus:—

“Thy son Horus is crowned on thy throne;
All life is through him;
He has made millions;
He has formed the gods”;

and proving the peculiarly intimate nature of the union subsisting between Horus and the souls of the deceased, it is said:—

“Horus he is my brother,
Horus he is my cousin,
Horus has come to me out of my father,
He has proceeded from the brains of his head,
He has made the gods,
He has made millions with his eye.
The *Only One*, its Lord,
The universal Lord.”

The allusion to the eye of Horus is in reference to a peculiar myth in which that deity, as the sun, was supposed to create all good things by merely looking them into existence;† Horus himself, as we shall hereafter see, being created by the actual speech of his father Osiris; and hence he was termed the speech, or literally the “word” of God.‡

It was as Horus Ra that the benevolent deity was most commonly represented, in the form of a royal figure with the head of a sparrow-hawk—the bird which in Egypt flew nearest to the sun—and wearing the solar disk upon his head. In his hands were usually the emblems of authority and life and power, the *was* sceptre and the *crux ansata*. As Horus Ra the god was almost invariably figured on the upper part of the Egyptian mummy-cases, and on the amulets laid upon the head of the deceased; and in this character the Hawk among birds, and the Basilisk or Uræus among reptiles, were his emblems, or, as we should better call them, his *totems*. The Egyptian kings, who by a magnificently conceived political fiction were themselves incarnations of the Deity, generally assumed also the name and offices of Horus the Sun in one of their two cartouches, which was called the Horus title, and which was, in fact, their proper name. This cartouche was always preceded by the hieroglyphics signifying Son of the Sun,§ and the custom of assuming the double name dated from the close of

* Chapter lxxviii.

† Dr. Birch.
§ “*Ze-Ra*” or “*Mes-Ra*.”

‡ *Ibid.*

the reigns of the Pyramid-builders, or the kings of the Vth Dynasty.*

Another singular feature in the character of Horus Ra was the first millennial reign of the deity as a king upon earth in that ancient period when men were uncorrupted, and the gods resided among them. It was the period of the Horsheshu, or the servants of Horus, when all Nature poured forth of her abundance to satisfy, not merely the wants but the pleasures of mankind; when the Nile ran with milk, and the choicest fruits grew spontaneously on verdant pastures, now arid and bare. The length of this elysial reign of Horus is not given with any accuracy, but it was said to have continued for many centuries,† and to have been only terminated by the rebellion of Typhon, or Set, the uncle of Horus, and the brother of Osiris.‡ The Egyptian believers never quite lost recollection of that blissful period of heavenly prosperity, and accordingly fully anticipated a time of final restoration, as well as a day of ultimate retribution, a time when Horus, who was in the meanwhile dwelling with the souls of the redeemed in the Aahla, or fields of peace, would hereafter return to earth again, re-establish the reign of the gods and the restoration of the world, and, to a greater or less extent, realize all the glorions prospects which still excite the imaginations, and maintain the faith of the believers in the Christian millennium. That such a condition should so generally be believed to have once existed is, as Canon Titcomb has well observed, in itself an echo of the voice of primitive revelation, and a heathen commentary on the words of the apostle of the Gentiles, that the "whole creation groaneth and laboureth together until now."§

By these reflections on the reign of Horus Ra I am insensibly led on, as it were, to consider the next character of the same divinity, or Horus, the avenger of his Father, a character in which to the classic writers the son of Osiris was very well known, although, with that perverse self-conceit which disfigures all the writings of the Greeks and Romans, the classic philosophers chose to interpolate a large number of foreign theories, and to misinterpret the Egyptian legend by overlaying it with commentaries obtained from an utterly uncognate cult.

The title *Nets*, which can also be rendered "deliverer" as well as "avenger," is one of the most mysterious of all the names of the God, and the texts in which it occurs use it in connection

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‡ Naville, *Textes relatifs au Mythe d'Horus*. 1870.

§ Rom. viii. 22.

with other expressions, which only add to its mysteriousness. The formula generally runs thus :—"Hail, thou avenger God, Son of God ! Hail, thou avenger Horus, proceeding from Osiris, born of Isis !"* Other variants of the same invocation have "engendered" of Osiris in the place of "proceeding";† and another, still more singular, "O avenger, born of Osiris, born of Isis," the Egyptian theory of generation being that all life was from the father, and all substance of the mother; and hence that a divine being could assume a human body, and yet retain his own separate personality. In this, therefore, the second office of Horus, there was indisputably an historical element; all tradition points with reverted finger to the period when the gods lived with men, and the reigns of Osiris the supreme deity, of Isis the great mother,‡ and of Horus the avenging prince, probably transmit the records through the Hamitic race, of the time when the *Beni Elohim* saw the daughters of men that they were fair,§ and the days when there were giants in the earth, whose annals are preserved in the Izdubar legends of Chaldea.||

In these primeval times, then, Osiris, the Supreme Being, or rather the Supreme Being in his human embodiment as Osiris, was known to mankind as a wise and beneficent king; as the author of all wisdom; as the discoverer of the arts and sciences, and more especially of that great science upon which the existence of Egypt depended—the science of agriculture. For these and his other holy offices he received the title of Unnefer, or the "Good Being"; and, conjointly with his wife and sister Isis, he governed Egypt in peace and prosperity for a long succession of happy years. Horus, their son, was the recognized heir to the throne, and yet at the same time the mysterious ancestor of the whole divine family. The cosmic deity Set worked in harmony with their administration and their aims. One discordant element alone was present to mar the perfect concord of the reign of Osiris, the true and glorious reign of the gods, and that was the envy and malice of his brother Typhon, afterwards identified with Set, the Sustedkh of the

* Champollion, *Système Hiéroglyphique*, p. 191.

† On a statue in the Museo Borghese.

‡ I purposely defer the examination of the Isis and Horus Myth, and the "Hathor suckling Horus" Statuettes, because they have reference to a distinct symbolism which is still less understood.

§ Gen. vi. 2.

|| See Smith, *Chaldean Account of Genesis*.

Asiatic Hykshos.* Thus far the Greek and Egyptian legends coincide, and thus far I am disposed to follow them ; but beyond this point they disagree, and therefore from this point I shall ignore the theories of Herodotus and Plutarch, regarding them with somewhat of the scorn of the Egyptian priest of Sais, who proudly told the Teian traveller, " All you Greeks are children." The truth is, that the hieroglyphic inscriptions do not afford us at present any clear information as to the actual status of Osiris, the origin of the anger of Typhon, or the cause of its painful success. A fratricidal war, they agree, terminated the dynasty of Osiris Unnefer. His son was driven from his throne, his wife exiled, and his own body shamefully mutilated, and the dis-severed fragments strewn over the ruined fields of the once prosperous land of Egypt. The widowed Isis, calling to her assistance her sister deity Nephthys and the god Anubis, went in search of the members of her lord's body, and wherever she found a portion of it, there it was embalmed by Anubis, and buried by her sister and herself. The chief portions of the body of Osiris were discovered at This or Abydos, and on the island of Philæ, in the Upper Nile, near Nubia. Hence those two places were held as especially sacred to the divinity, and to be buried in or near Abydos was, in the time of the first twelve dynasties, almost a passport to a happy resurrection. The sanctification of the island and temples at Philæ, the reticence concerning the name of Osiris, the irrevocable oath referred to by Herodotus, " By him who sleeps at Philæ,"† and the Litanies of Isis and Nephthys, all seem to belong to the more philosophical religious belief of a later period, and to be more derived from, than dictated by, the language of the *Ritual of the Dead* or the funeral papyri. We are not told definitely by what means the young Horus raised an army and dethroned his uncle, or for how long a period the war of revenge continued ; but to it and to the assistance rendered by certain spiritual beings to Horus in the strife, there are many distinct allusions in Egyptian literature. In truth, the mythical and the historical elements in the lives of Osiris and Horus become so blended together that it is

* " In the times which preceded, immortal beings had reigned in Egypt ; that they had communication with men, and had uniformly one superior ; that Orus, whom the Greeks call Apollo, was the last of these. He was the son of Osiris, and after he had expelled Typhon, himself succeeded to the throne."—Herod., *Euterpe*, cxliv.

† Herodotus, *Euterpe*, xxxvi., " One whom I do not think it religious to name."

" Do not thou utter that name of the great god,"—Renouf, *Egyptian Grammar*, p. 38.

impossible now to separate them, and to allot to each its distinct position and appropriate references. Certain, however, it is, that very early in Egyptian mythology the dead Osiris became to be regarded as the type of all souls and things in whose bodies the power of re-creation yet remained, and the wicked Typhon as the symbol of all evil, spiritual and physical; and that consequently the war with him and his confederates carried on by Horus *Nets* assumed the character of a mystical contest between the spiritual powers of good and evil, and also, by a parity of reasoning, between the temporary death of the sun-god Ra by the eclipse of night, and the certain resurrection of the same deity in his form of Horus, the rising sun; thus again reuniting the ideas of antagonism between virtue and vice with the physical opposition of light and darkness; and it is, therefore, to the testimony of the *Ritual of the Dead* and the *Litany of Horus* to the offices of Horus, as the spiritual avenger of his father Osiris, still himself remaining an allied deity, that I call your attention now.

The chief texts in which the historical doctrines of the Avengement of Horus are contained are, I. The *Ritual of the Dead*; II. The Texts on the Temples of Edfu* and Philæ; III. The other texts called the *Litany of Horus*; and, IV. The Litany called the *Assistances of Horus to his Father Osiris*. Reserving the references in the Ritual for a later consideration, the sentences being so involved with ideas which I shall have to consider further on, I will first present you with some illustrations of the doctrine of the Avengement, derived from the temple texts, as published by M. Naville, of Geneva.†

On the whole, or nearly the whole, of the walls of the Ptolemaic temple of Horus at Edfu, are represented the life and actions of Horus, or as he is there called Harhut, under two chief divisions,—the first comprising what may be called the historical part of the myth, namely the reign of Osiris, and the war with and subsequent defeat of Typhon, under the forms respectively of a Hippopotamus, a Crocodile, a Serpent, and an Asiatic or Hykshos

* *Edfu*. The modern name for the city and name of Apollinopolis, called by the Egyptians Teshor. The most ancient name of this town was Teb. The great temple of Edfu is one of the most stately and best preserved, Karnak and Tentyra excepted, in Upper Egypt. It was dedicated to the god Horus, and was built on the same plan as that of Tentyra, by Nekhtarhebi II. (?) of the XXXth dynasty. The interior walls are covered with a series of mythical inscriptions relative to the legend of Horus, applied to Ptolemy Euergetes II., and a series of dialogues between the divinity Horus and the royal founder. A great number of towns and other geographical sites are mentioned in the Hieroglyphics, together with the usual inflated lists of donations to the temple and its priests.

† Naville, *Textes relatifs au Mythe d'Horus*, pl. i. p. 9.

invader; and secondly, an application of these same myths to the reigning sovereign of Egypt, Ptolemy Cæsarion,* and his mother Queen Cleopatra VI. as the goddess Isis; but into that division of the legend I do not propose to go, and indeed I shall do little more as regards the first section of this subject than quote a selection of extracts from the hieroglyphic texts, as the analogy of this part of the life of Horus with any doctrine of Christianity is not very marked. The titles and offices of his father having been related, and the subject of the whole text stated the justification of Horus against his enemies, Horus is then called "Harhut, the great God, the Lord of heaven, the Lord of the *Mesen*, the shining light which beams in the horizon, the brave, the valiant one who has gone forth to destroy Set, the protector of his mother Isis." He goes forth conquering and to conquer. He calls his servants to his allegiance. The gods applaud and strengthen him, and the god Thoth proclaims to the people a festival in his behalf. "A day of the festival of Horus the Lord of the country, the son of Isis the well-beloved, the Justified Lord, the child of Osiris, the son of Unnefer, who is powerful in all places whither he is found."† The Horsheshu or servants of Horus, supposed by some writers to have been the primeval inhabitants of Egypt, join his army and co-operate in his successes. They ascribe glory to him as "Horus, he who disperses Typhon from Egypt, the good guardian of the town of Sen," whereupon he exclaims, "I pierce [the hearts] of thine [his father's] enemies, I cut their bones, I break their backs, I grind their flesh, I drink their poison, the arrow is fixed in their face, I have cloven the head of the hippopotamus."‡ Standing in his boat and taking his lance in his hand, he descends along the river Nile, fighting his victor way from shore to shore. He boasts again and again, "I have cut the heart of Baal at Edfu, I take the hearts of the adversaries, I drink the venom of the vanquished in the town, I open my throat against the enemies."§ Let Typhon assume, Proteus like, whatever form he may, still he is fated to be overcome. Scene after scene of victory is thus represented, and at last the victory being consummated, we are told in the text that the chief towns of Egypt (of which a list is given) "rejoice themselves and are in happiness when they see the very beautiful temple which is made for Horus, the son of Isis, who has built the great city."|| The goddesses Isis and Nepththys call to their priestesses and the people, say-

* It is uncertain which Ptolemy and Cleopatra are intended, the second cartouches being left blank.

† Naville, *Textes relatifs au Mythe d'Horus*, pl. i. p. 9.

‡ *Ibid.*, pl. ii.

§ *Ibid.*, pl. iv.

|| *Ibid.*, pl. iv.

ing, "Come, run towards the Lake of Horus, behold the god in his boat, see the son of Isis in his boat, showing himself like Ra in the bark *Sekti*, with his arrow in his hand."* The people of Egypt tender him their praises and offer him their homage. Osiris glorifies his son. Isis bestows her love upon him, and the whole multitude of the ransomed Egyptians break forth into singing, and then in the two hymns which follow are celebrated, in the first the might of Horus, and in the second the beauty of his vestments and the terror of his spear.

"Let us rejoice, daughters of the great town of Tep, who are dwelling† toward (. †).

Come, behold Horus on the right of his bark
Shining like the sun who lightenest on the horizon.

He is ornamented with a green dress,§

He is girded with precious stuffs,

He is decorated with linen,

The two crowns are upon his head,||

And the two uræi are about his temples.

He has received the sceptre,

And the skin he shines over the Pschent. ¶

Sekhet is upon his head,

Thoth protects him,

Pthah speaks for him.

Thy lance has pierced thine [enemies].

Sokaris says to him, Thy arm has struck the [adversaries].

Hathotep,** of Senefer,†† says to him, When . . . thy arrow is in part of Keb,

Thy lance in the country of the figs.‡‡

I have thrown [my arrow] to the right,

I have thrown [it also] to the left, like a valiant hunter."

Thus did the Egyptian women, like Miriam and her companions, rejoice with timbrel and music. §§ But it does not suffice that Horus shall slay Typhon and cast his followers into Hell; following the primitive code of *Lex talionis*, as he had done to Osiris, so shall the son of Osiris do to him. The body of the dead adversary must itself be dismembered, and sent to all the principal towns of Egypt: *fiat justitia*; and therefore

* Naville, *Textes relatifs au Mythe d'Horus*, pl. iv. + *Ibid.*, pl. viii.

† Lacuna. § Emblematic of the Resurrection.

|| Of Upper and Lower Egypt; also symbolical of power over both the Heavens and Hades. ¶ The two crowns united.

** Hathotep, peace of Hat, i.e. Hathor.

†† Sen-nefer, making good, common Egyptian surnames.

‡‡ This was a common name of the land of Egypt.

§§ The women are represented with sistrums and timbrels in the illustrations to this hymn.

Typhon, in his form of the hippopotamus, has to be cut in pieces before the Lord,* and then Isis, addressing her beloved son, exclaims, "Thou shalt carry the thigh to Tettu,† to thy father, Unnefer, the justified; thou shalt take his back to Ni, to the great Horus, the Lord of Sechem; his palms shall be taken to Ten, to thy father, the great Anhur; thou shalt take the shoulder to Het, to thy brother, the great Apher (Anubis); thou shalt take the leg to the place of Siout, to Tafnut, the Lady of Oxyrhyncus; his head and rump will I take myself; thou shalt throw his bones to the cats, and scatter his flesh before them." This is precisely the spirit of the Psalmist, "That thy foot may be dipped in the blood of thine enemies, and that the tongue of thy dogs may be red through the same."‡

Terrible indeed was to be the fall of the opposers of Horus and Osiris, for not content with destroying the power of the evil being, and their allies upon earth, having expelled Seb and his colleagues out of Egypt, Horus the avenger must further drive them into hell, almost literally in the words of the Apocalypse, "to a lake that burneth with fire and brimstone."§ The genie of Hades went to receive the souls of the damned, and they exclaim with one consent to Horus, "I burn their bones in my flame"; then more directly addressing the deity, "Thou hast driven far off the profane from behind thy temple, who are taken behind thee, [thou art to thy temple] like a wall of iron or of stone, and thou guardest it on all sides." Thou art 'the unparalleled son,' who hast fought with Typhon; thy heart is closed, my son Horus; thou piercest the enemies of thy father, and givest them no repose."

With one more hymn I must close these extracts from the temple texts. It is a part of what may be called the "Chorus of the Maidens"—

"We celebrate thee:

We rejoice in seeing thee, because thou shinest upon us like Ra:

We strike our tambourins in thine honour on beholding thee,

Since thou hast taken to thyself the dignity of Harkhuti.

We praise thee, we give thee praises, because thou shinest upon us as Ra, who lightenest the horizon.

We celebrate thee:

We rejoice in regarding thee, we exalt ourselves in seeing thee:

We give thee our praises who goest near to the heavens, because thou hast stricken through the most wicked of thine enemies.

* Naville, *Textes relatifs au Mythe d'Horus*, pl. ix.

† Tettu or Tattu, the abode of Osiris in Hades.

‡ Psa. lxxviii. 23.

§ Naville, *Textes relatifs au Mythe d'Horus*, pl. vii.

We celebrate thee :

We praise thy majesty, because thou hast stricken down the enemies of thy father."*

In the *Ritual of the Dead* there is not that distinctiveness of delineation as regards the office of Horus *Nets* that is found in the Litanies of Horus, and this is owing, of course, to the Ritual being, like our own Prayer Book, a collection of prayers and offices not necessarily connected together, although having very much in common with each other. There is a uniformity of design, but by no means a uniformity of expression prevailing between all the different parts of the work; and thus it is that in the *Ritual* the acts of Horus are blended with the acts of the other deities, and he is viewed more in relation to the believer than in that of his relationship to his father. The *Ritual* begins with Horus, and it ends with Horus, but it is Horus as assimilated to the soul of the deceased rather than as Horus the victorious king of the Horsheshu, though at the same time there is a continual reference to the deity in that attribute also. Accordingly, in the very first chapter of the *Ritual*, this phrase occurs: "I am with Horus, supporting the right shoulder, or, as we should say, arm of Osiris. I expel the wicked from them, or one of the celestial regions where Osiris resided."†

In the XIXth chapter, that of "the Crown of Justification," which is to be given to the deceased by the god Tum as his reward for his active holiness, the deceased, still in the character of Horus, is said to justify Osiris, who dwells in the west, to justify Osiris against his enemies, to be justified against Seb and his associates, to make "all his enemies fall down stabbed," and to repeat this slaughter "millions of times." "All his enemies fall down stabbed; he drags them, throwing them down from the place where they are to the blocks of the east; he cuts off their heads, breaks their necks, and cuts off their thighs, giving them to the great strangler in the valley.‡ They do not escape the custody of Seb § for ever."

With reference to the east, it should be noted that in Egyptian mythology hell was situated in the east, as heaven was in the west. The great strangler in the valley is the devouring serpent, who lives by devouring the souls of the ungodly.

* Naville, *Textes relatifs au Mythe d'Horus*, pl. viii.

† "The Chapter of the Manifestation to Light."

‡ The devouring serpent. See Bonomi, *Sarcophagus of Oimeneptah I.*, plate 14 c, where this very subject is represented.

§ Seb was the primeval father of all the gods, and the grandfather of Horus. His analogue was the Chronos of the Greeks.

Farther on in the *Ritual*,* Horus is proclaimed by his father Osiris: "Everywhere welcomed is Horus by the gods." While by the change of persons so frequent in all Eastern poetry, to the young deity himself, the speaker cries out, "Lead on, Horus, son of Isis, support thou thy father Osiris." Agreeably to this invocation, the son of Osiris replies,—

"O Osiris, I have come to thee:

I am Horus. I have avenged.

O Osiris, I have smitten for thee thine enemies,

I have been avenged upon them."

In the Litany of the names of Osiris,† Horus is called the sustainer of his father under all his names; and in the section entitled "the Gates of Elysium,"‡ Horus declares,—

"I am Horus, the defender of his father; I am Horus the justified:

I have come:

I have aided my father Osiris,

The good being;

I have brought life and health to my father Osiris."

In the LXXVIIIth chapter of the *Ritual*,§ the mysterious birth of Horus the Avenger is referred to; of course it must be understood that it is the soul of an Egyptian who is here speaking in his hypostasis as Horus:—

"He is among the spirits attached to light,

Making transformations into the limbs of a god.

He is one of the said spirits attached to light.

Tum himself || made his transformations into his eyelashes (?).

He transformed the spiritualized;

He grew against them when they were with him,

For he was the only one they let forth.

He came forth from the horizon with them;

They made him the terror of the gods and spirits transformed with him,

The Only One of millions,

Creating all that is made.

For first Osiris made the generation of Horus;

Osiris figured (moulded) him.¶

How was he more dignified than those who belong to the

* Cap. cxxviii., "The Chapter of Adorations to Osiris."

† Cap. cxlii., "The Book of preparing the dead, that he may go, walk, and come out as the day, in all the transformations he wishes, knowing the name of Osiris in all the places where he wishes to be."

‡ Cap. cxlvii., "The commencement of the gates of the house of Osiris, in the Fields of the Aahlu, said by the deceased."

§ The "Chapter of Turning into a Hawk the God of Time."

|| The sun in Hades.

¶ Heb. i 3. Of "the express image of his Person."

beings of light, created with him? Osiris rose as a divine hawk.

Horus incorporated it with his soul to take away the "things of Osiris at the gate."*

In passing I must explain that the allusion to the eyelashes refers to the partial shielding or concealing of the creative powers of the eyes of Horus during his performance of his semi-human office as the avenger of Osiris.†

• These extracts form the *Ritual* must suffice, while in the Appendix to that mysterious work called the *Adoration of Osiris by his son Horus*, the following passages occur:—

"I give glory to thee,
Osiris, Lord of the gods,
Great god living in truth
(Is said) by thy son Horus.

I have come to thee,
Bringing thee truth.

Where are thy attendant gods?

Grant me to be with them in thy company.

I overthrow thy enemies,

I have prepared thy food on the earth for ever."‡

In the *Assistances of Horus*, the various filial offices of the benevolent deity are enumerated in a litany of more than forty verses, each of them commencing with the formula "I have come," and from these I shall content myself with extracting the following. The Rubric of the chapter runs thus:—

"The chapter of the Assistances of Horus to his father Osiris, when he goes to see his father Osiris, when he comes out of the great sanctuary to see him. The sun and Unnefer § he has united, one and the other of them as he wishes, resplendent in Hades."

"Hail, Osiris! I am thy son Horus:

I have come, I have supported thee,

I have overthrown thy enemies for thee,

I crush all evil girding thee,

I attack for thee,

I lie in wait for thee,

I have put forth my arm against the shamers of thy face,

I have brought to thee the companions of Seb, tying their mouths,

I have led to thee the south,

Subdued for thee the north;

* Cap. lxxviii.

† See Lefebvre, *Le Mythe Osirien*, sec. "les yeux d'Horus."

‡ Bunsen's *Egypt*, p. 324.

§ Verses 1 to 8.

I have preserved for thee food from the north and south ;
I have supplied for thee the victims of those who insult thy face."*

The next verses—those from 16 to 29—relate to various offerings made to the God, of corn, wild fowl, geese, fruit, beer, and incense, and then the mystical part of the Litany is resumed, and Horus pleads :—

"Hail, Osiris ! I am thy son Horus :
I have come, I have given thee thy spirit,
I have given thee thy power,
I have given thee thy force,
I have given thee thy triumph,
I have given thee thy desolating power,
I have given thee thy victory,
I have given to thee thy eyes ; and thy plumes upon thy head.
I have given to thee Isis and Nephthys to place them there ;
I have filled for thee the eye of Horus with oil,
I have brought to thee the eye of Horus, [dazzle or blind]
their face with it."†

The allusion to the eyes and plume is to the restoration by Horus of the creating power of his father Osiris, the power being symbolized by the pupils of the eyes, and the heavenly dignity by the great Atef, or plumed crown peculiar to Osiris. Thus Horus, "the beloved son" of Osiris, avenged and glorified his heavenly and yet human father.

This reference to the ointment, or oil of the eye, of Horus, receives further explanation in the discourse of Horus, a new text, which has been published by M. Naville,‡ verse 39 of which runs thus, "I have anointed thee with holy oil," and in another text—I will quote the French translation—"J'ai oint ta tête de l'huile du front d'Horus, si on l'y détruit (sur le front d'Horus), il est détruit comme dieu (sa divinité est détruite)." Evidently, therefore, the divine power of Horus was in some way connected with the sacred oil of unction ; and though the title "Anointed One" does not appear to have been applied to the god, yet the circumstance is another of those singular parallels which abound throughout the whole of this myth with the Hebrew and Christian phraseology.

Before passing to the next division of my subject, I ought in common honour and Christian verity to remind you that both the inscriptions on the walls of the temple of Edfu and the present copies of the *Litanies of Horus* which we possess, are all

* The Good Being.

† Phrase quoted in Renouf's *Egyptian Grammar*, page 16.

‡ *Le Discours d'Horus à Osiris* in *Zeitschrift für Äg. Sprache*, Juli, 1875.

very late, and that there is evidence in them of a philosophy and a spirit similar to those of the *Ritual of the Dead*, and that they were undoubtedly written when a philosophical tendency had begun to spoil the Egyptian mythology; when the pseudo-historical explanation of the sacred legends was becoming popular, and when, no doubt, the grand language and conceptions of the Old Testament prophets, which had been introduced into Egyptian literature by the Alexandrian Jews, had leavened the religious system of the Hamites in precisely the same manner as the Buddhist legends were modified and purified by the Christian dogmas after the contact of the Hindu Gooroos with the Nestorian priests of the West. I must lay considerable stress upon the axiom, which should never be forgotten by a student of comparative mythology, that an analogy of ideas is not necessarily proven from an analogy of expression, unless by a parity of reasoning, the identical principles underlying them can be clearly traced out by a comparison of texts, monuments, and commentaries of the same period; since, for purposes of critical analysis, a subsequent exposition is merely an expression of the opinion of an individual writer. And what I affirm concerning tenets and phrases I unhesitatingly affirm concerning symbols and emblems also, Inman, Dana, Hislop, and Bryant to the contrary notwithstanding.

Revenons à nos moutons. It is much to be regretted that in all the mysterious offices of Horus the avenger there is so much confusion of ideas and characteristics that it is almost impossible to separate the one from the other. Insensibly Horus is addressed as, or becomes, father, son, and man; is in himself a unity and a trinity; a victor and a victim, giving honour to himself, receiving honours from himself; he is the son of Isis, of Hathor, and of Nu, the heavenly waters.* He is the son of Osiris, of Tum, of Ra, and of Harchuti; he receives the Good Spirit from his father; he gives the Good Spirit to his father; and he is himself, as will be presently seen, the Good Spirit; material and immaterial; mortal and immortal; he fills every sacred personation, and performs every sacred duty, and is in all things, yet submits to all things.†

These reflections naturally prepare the way for the consideration of the third office of Horus Ra, the office which is to us of the chiefest significance, and upon which I hope to dwell in some detail—the character and office of Horus *Nets*, the Deliverer

* Or, "the waters that are above the firmament."—Gen. i. 7.

† The same Pantheistic confusion runs throughout the great Litany of Ra, the chief texts of which belong to the period of the XIXth and XXth Dynasties.

from the Power of Apophis or the Evil One. From a very early period in Egyptian history, the myth—I use the term in no irreverent sense—of a personal Deliverer became an integral part of their theology. Many of the already-cited texts allude to it by implication, others directly state it. The fact is in itself indisputable, and the doctrine stands more prominently forth in the Egyptian theology than in any other except the Buddhist and the Christian. Furthermore—and this feature of the cultus must be distinctly noted—it is only in the Egyptian and the Christian faith that the ideas of deliverance by a deity, and of [acquired] imputed righteousness underlie all the minor points of belief. The vicarious righteousness of the Buddhist differed in this, that it was a righteousness of passive holiness, a negation of wrong-doing rather than a life of right action; it made all life, animal and vegetable, equally sacred, without having regard to the personality or organization of the living being. The Egyptian and the Christian faith equally also regard life sacred, as a divine principle, but differing in degree. The Buddhist would not pull up a blade of grass from the prairie, a Christian would not wilfully destroy a camel-thorn in the desert. Wrongly acting in the spirit of Pope's lines—

"Who sees with equal eye, as Lord of all,
A hero perish or a sparrow fall;
Atoms or kingdoms into ruin hurled,
And now a bubble burst, and now a world,"*—

a Gooroo is taught to consider a flea and the man upon whom it feeds as of equal value in the sight of Boodh; but the Christian regards a man as of far more value than many sparrows. The Egyptians esteemed sin or righteousness as reducing man to the rank of beasts, or elevating him as equal to the gods themselves. Horus redeemed men from the assaults of moral and physical evil, and the ideas of purgatory and of reward were measured according to the magnitude of the offence, independent of the rank or person of the offender, and solely in regard to the character of the individual culprit. These points of agreement between the Hamite and the Semite faith, between the metaphysical and the doctrinal theologies, are of the highest antiquity. It is not my province as an archæologist to attempt to explain how or why these things should be. I present to you the facts, such as great Egyptian scholars of various religious schools of thought have interpreted them to be. I hold that they are the result of a traditional faith,

* *Essay on Man*, lib. i., sec. 3.

rendered still more striking to us who read them in the light of a perfected revelation. I believe that, in the same way as we claim by the commentaries of the epistolary writers of the New Testament, the better now to comprehend the history of the Old, so, by a comparison of the Jewish and Patriarchal systems we are able to see the real motive of the Egyptian creed, and to understand it in a degree far beyond anything that the Egyptian priests themselves understood or anticipated; and also, mark you this, far beyond the penetration of the Jews who were their contemporaries.* There is still a sense in which these dogmas can be further correlated, but that, with all due deference, I leave to those reverend members of this Institute who have done me the honour to be present this night. Suffice it then to restate that there is certain evidence, that no doctrine was more permanent, survived more dynastic changes, was less influenced by the three great religious innovations to which Egypt was subjected in the twelfth, seventeenth, and nineteenth dynasties, or which exercises a holier control over the grosser passions of the flesh, than the dogma of Horus, the Deliverer of Mankind and the Justifier of the Righteous.

The very first of the chief epithets applied to Horus in this his third great office has a startlingly Christian sound; it is the "Sole begotten Son of the Father," to which, in other texts, is added "Horus the Holy Child," the "Beloved son of his father." The Lord of Life, the Giver of Life, both very usual epithets on the funeral scarabei, the "Justifier of the Righteous," the "Eternal King" and the "Word of the Father Osiris."† There were other names which we are expressly told in the sacred texts no man knew but himself, no ear had ever heard, no tongue had ever spoken—names of so awful an import that if pronounced they would arrest the sun in his career, control the powers of hell, and threaten the duration of the universe itself. Hence—but here I only cite from recollection—Horus was sometimes simply referred to as the name alone, without any other epithet or explanation: all these ideas, and many other mysteries deduced from them, are traceable in the Gnostic gems, the early mediæval magical books and the mystical amulets of the Alexandrian Christians.

The vicarious atonement of Horus was chiefly carried out after the death of the believer, and while the body remained uncorrupted, and the soul conscious of its doom, but conscious also of its power to modify it by the suffrages of the faithful and the clergy with

* See Jahn, *Sacred Antiquities*, sec. 310.

† Dr. Birch. *Ritual* in various places. See also p. 58.

their performance of ceremonial rites on earth and the heavenly guidance of Horus and Thoth in the regions of Hades.

Immediately upon systemic death taking place, certain solemn words were whispered into the ears of the corpse, words which were of so holy a nature that they were only *indicated* on the funereal papyri, and of which the rubric declares, "no men have spoken, no eye has perceived it, no ear has heard it, not any one other face has looked in it to learn it. It is a true secret; when it is known all the providers in all places supply the dead spirits in Hades. Food is given to his soul upon earth; he is made to live for ever; nothing prevails against him."* In fact, as it has been well shown by Dr. Birch, in his preface to the *Ritual of the Dead*, the deceased was supposed to continue to live after death, or, as the texts express it, "did not die *again* in Hades."† The first death of the soul was its birth into the world in the human form, it being in its nature a pre-existent entity; and in this its birth in the world it was considered as the "egg of the great cackler," or the goose-god Seb, or Saturn. The mortal man, indeed, was not a mere union of soul and body, for at least five distinct principles were necessary to complete the man. These principles were—*Ba*, the soul proper; *Akh*, or *Khu*, the intelligence; *Ka*, the existence; *Khaba*, the shade; *Kha*, the physical body; and *Sah*, the mummy; and these could only be perfect so long as the heart, which was considered as the chief organ of life and sense, was unconsumed; and therefore there were a variety of prayers recited, and amulets employed, to protect that the most vital part of the deceased.‡ Hence the peculiar disks of painted linen, or thin copper, called Hypocephali, were applied to the top of the head of the mummy in order to preserve the vital principle; and these disks were supposed to represent the pupils of the vivific eyes of Horus Ra, whereby, as I have already stated, man was created.

The soul of the deceased was, it is true, in itself an eternal essence, but it was not apparently an eternal individuality; a refinement and a distinction lost sight of by certain heretical theorists, who contended for the pre-existence of the human soul, a doctrine which they evidently derived from this feature of the Horus myth.

While the body swathed, embalmed, and rendered sacro-

* *Ritual*, cap. cxlviii. "The book of instructing the Spirit, the delight of the Sun, who prevails as Tum, who is rendered great as Osiris, who is made powerful like him who dwells in the West, who is terrible like the gods."

† Bunsen's *Egypt*, vol. v. p. 134.

‡ Chiefly caps. xxvi. to xxx. The preservation of the body in Hades.

sanct by its mysterious amulets, the *Tat*,* the *Get*,† the *Uta*,‡ and the *Apa*,§ with a number of other objects whose use is not yet known, while thus on earth the body lay, Horus prepares to protect his servant, first in his trials and conflicts in the nether world, and then vicariously to justify him by attributing to him his own good offices in the Hall of the Two Truths. Although in a paper which I previously read before you I have dwelt upon these portions of the *Ritual*, yet for the complete understanding of my subject I must go through them again now; but I will endeavour not to repeat, more than is absolutely necessary, the same passages which I cited then. Let us, to see how Horus became the Deliverer and the Justifier, in imagination follow the travels of the soul of an Egyptian deceased.

The first enemy that the soul of the deceased had to encounter was the great Enemy of the gods and of mankind, typified by a huge serpent,|| who lies in wait for him in the lower Hades, and seeks to entangle him in his folds. In this terrible danger the soul accosts the serpent, and deprecates its anger by declaring that his "sins are not found out on these my hands"; and thus the enemy is avoided, not, as we shall presently find him, defied or repelled, for as yet the god Horus had only protected, but not justified, his votary. Soon, however, the consciousness of his own ultimate complete acquittal leads the deceased to cry out with prophetic prescience:

"I come forth with justification against my enemies,
I have reached the heaven,
I have passed through the earth."¶
Then, addressing Osiris, he pleads for acceptance, because
"His great sin is not divine,
Or his fault complete,
Falling into the hands of the Lord of truth,
For I have corrected the injuring evil in him,

* The *Tat* was an amulet in the shape of the instrument which is wrongly called a Nilometer; it was generally wrought in blue porcelain, and was an emblem of strength.

† The *Get* was an amulet in the form of a buckle; it was generally wrought in black jasper, and is fully described in Maspero's *Quelques Papyrus du Louvre*, 1876.

‡ The *Uta* was an amulet representing the mystical right eye of Horus.

§ The *Apa* was an amulet in the form of a fly or scarabeus, and it was laid upon the breast of the mummy to preserve the vital warmth of the heart.

|| *Ritual*, cap. vii., "The Chapter of Escaping out of the Folds of the Great Serpent."

¶ Cap. x., "The Chapter of Coming Forth with Justification."

The god turns the evil to truth,
Correcting his fault ; " *

and he is then permitted to behold afar off the first glimpse of the great divinity as the sun in the lower world.† To him a grand and long series of adorations is paid, and he then prepares, fortified by his great devotional exercise, to commence the various transformations which he will have to undergo before he can be introduced by Horus into the hall of judgment. The chapter which relates this is one of the most obscure, and its rubric is perhaps the longest in the Egyptian Ritual : ‡ it would lead us too far away from the main subject of this discourse to even do more than mention the heads of it. Suffice it to declare that each of the lesser deities of the Egyptian Pantheon is implored to assist the deceased, who almost at the same time declares his identity with them, and more especially with "Horus in the day of the battle between Horus and Set," and "he is transformed into his soul from his two halves, who are Horus, the sustainer of his father, and Horus who dwells in the shrine." Among the mystical phrases in which that deity also is addressed is, "the one ordering his name to rule the gods is Horus, the son of Osiris, who has made himself a ruler in the place of his father Osiris.§ Then follows a litany of adorations to Isis, Osiris, Horus, Nephthys, and the other deities,|| and then succeeds the "Crown of Justification"¶ to which I have already referred. Hitherto the soul of the deceased has been undergoing probation, and performing its devotions as a spiritual being or *eidolon* only ; but soon the second stage of its journey arrives, and upon the performance of the appointed duties, and the utterance of certain invocations either by the soul, or vicariously for him by the priest upon earth, the various members of his body are one by one purified and restored to him, and the book in which this is described is called the "Reconstruction of the deceased," and extends from the twenty-first to the twenty-sixth chapter of the *Ritual*. The body having been reconstructed,—and it is singular that in this office Horus the Deliverer takes no part,—the body and soul have to be preserved from the attacks of the evil beings inhabiting Hades ; and the first member to be

* Cap. xiv., "The Chapters of Rubbing away the Stains from the Heart of the Osirian (deceased)."

† Cap. xv.

‡ Cap. xvii., "The Egyptian Faith."

§ Cf. 1 Cor. xv. 24 ; Ephes. i. 21.

|| Cap. xviii., "The Book of Performing the Days."

¶ Cap. xix.

thus protected is the heart, which is done by the mediatorship of the four genii of the dead to whose care the different organs of the body had been confided while in a mummied condition.* No sooner, however, is this effected, than one of the Typhonic crocodiles† comes forth from the waters on the infernal Nile to destroy him; but the deceased repels him by the name of "the great god," and declares that he "is Horus the preferred," and thus escapes injury.‡ This attack is again repeated, and again unsuccessfully, for, boasts the deceased, strong in the defence of Horus,

"My face is open,
My heart is in its place,
My head is on me daily,
I am the Sun protecting himself,
No evil thing injures me."§

Then comes forth also a terrible viper, but the deceased triumphantly repels him.|| Then baffled in their attempts at open warfare, the evil beings assail the deceased from behind, intending to devour his spine, but the repetition of a mystical formula drives them away.¶ Then the deceased is surrounded on all sides by snakes, and again he repels and passes through them. After this a great tortoise obstructs his passage;** and then, still more deadly than any enemies which have preceded them, a number of little highly venomous asps cling around his feet, but all unavailingly, for them the potent declaration terrifies: "I am Horus, the son of Isis, I am come to see my father Osiris";†† and the name of the benevolent deity overcomes all resistance, as does the name of our Blessed Lord in the mediæval legends of purgatory and limbo.‡‡ As a last assault, the Evil Being himself, under the form of the Serpent Apophis, comes forth to stop the way, and to him and his efforts the deceased rejoins,

"Back, thy face is turned down by the gods;
Thy heart is pierced by the Lynx. §§

* These genii were Amset, Hapi, Tautmutf, and Kabhsenuf. They have been often figured, especially in Sharpe's *Bible Texts*, p. 187, 1st edition.

† "Back crocodile Hem, back crocodile Shui, come not against me, I have knowledge of potent spells, utter not the name of the great god." Same passage as amended by Mr. Le Page Renouf.

‡ Cap. xxxi., "The Chapter of Stopping those who came to take away the Mind of a Person from him in Hades." § Cap. xxxii.

|| Cap. xxxii., "The Chapter of Stopping all Snakes."

¶ Cap. xxxiv.

** Cap. xxxvi., "The Chapter of Stopping the Tortoise."

†† Cap. xxxvii., "The Chapter of Stopping the Asps."

‡‡ Hone, *Ancient Mysteries described*, p. 138.

§§ An epithet applied to an uncertain divinity, Pasht (?).

That which is thy destruction has been ordered to thee by Truth ;*

Those who are on the road have been cast down ;†

The precursors of the Apophis,

The accusers of the Sun are overthrown ;

Thy tongue is greater than the envious tongue of a scorpion,

It has failed in its power for ever.”‡

Then addressing Horus, “Oh, Horus,” says the deceased, “thou pollutest the accusers of the Sun, the hater of the Sun whom thou seest is stopped by thee.” And then in a strain of prophecy, foreseeing the ultimate end of the power of darkness, he turns to Apophis and declares,—

“The great Apophis,

The accusers of the Sun have been judged by Akar ; §

The great gods are victors,

Leading him captive,

Justifying the Sun against the Apophis four times,” or, in other words, completely. This first great victory over, the deceased dedicates all his members anew to the different divinities, “till there is not a limb of him without a god” ;|| and thus he is like to every one of the divinities, even to the highest, so that he can say of himself, “the Osirian has been deemed the Lord eternal ; he has been judged like Kheper Ra.”¶ He is the Lord of the Crown, and, therefore, by a sublime psychostasis,

“he is Horus who dwells in, or who treads amongst millions.

He does not die again, he is his being,

he is the light illuminating the precincts one after another,

he is escaped from all evil things.”

No wonder, therefore, that the final rubric declares of this chapter, “This said, a person passes in every direction or in every part.”

It seems to partake somewhat of the nature of a contradiction that a believer of whom such glorious things could be confidently asserted, was liable to any of the wants of mortal life, or to undergo any further trial or purification ; but it nevertheless was so, for the greatest of all trials was yet to be undergone, and therefore, the body and soul, exhausted by so long-sustained a conflict, had to be refreshed with heavenly

* Or, rather, “Thmei, the goddess of truth.”

† The previous emissaries, Serpent, Crocodile, Tortoise, &c.

‡ Cap. xxxix, “The Chapter of Stopping all Reptiles.”

§ A mystical title of Osiris.

|| Cap. xlii., “The Chapter of Turning away all Evil, and Turning back the Blows made in Hades.”

¶ The Creator under the form of the sacred scarabeus.

food, and this divine nutriment was accordingly given to the deceased by the goddess Nutpe,* who fed him with heavenly food, and refreshed him by a liquor expressly called the "water of life." After having thus restored his energies, the deity Thoth, or the divine light, places a mystical book in the hands of the deceased, with instructions to guide him on his further progress through Hades. The chapters of the *Ritual*, which are supposed to embody the contents of this book, are doubtless the oldest, but they are also, unfortunately, the most obscure in the whole liturgy.† Gate after gate in the Kerneter has to be passed by the deceased, who causes each of them to open to admit him by repeating the awful names which are contained in the book of life or light. Again and again is the character of Horus assumed for protection:—

"The Osirian is the elder Horus, the rising sun,‡
 I have passed the gate to see my father Osiris,
 I have made my way through the darkness to see my father
 Osiris, I am his beloved,
 I have come to see my father Osiris,
 I stab the heart of Set,
 I do the things of my father Osiris,
 I have opened every door in heaven and earth,
 I am his Beloved Son,§
 I have gone over to those bound and tied in the place of
 death."||

And then commence a curious and completely inexplicable series of metempsychoses, in which the soul is changed into the form of a hawk, emblematic of Horus Ra ¶ an angel, or "a divine messenger,"** a lotus, "the birthplace of Horus,"†† "the pure lily which comes out of the fields of the Sun," into a sacred Heron,‡‡ whose residence is on the boughs of the tree of life, into a crane,§§ into a human-headed bird,||| a swallow,¶¶ in

* A myth which is found also in the Assyrian legend of the descent of Ishtar into Hades. See *Records of the Past*, vol. i. p. 14. See also Sharpe, *Bible Texts*, p. 3.

† Caps. lxiv. to lxxv., "The Manifestation to Light."

‡ Cap. lxix., "A Chapter of Coming Forth as the Day."

§ Cap. lxxiii., "The Chapter of Passing through the West as the Sun, and of Passing the Gateway."

|| Cap. lxxv., "The Chapter of Going to Annu (Heliopolis), and of Taking a Seat there." ¶ Cap. lxxvii.

** Caps. lxxix., lxxx.

†† Cap. lxxxi. It was for this reason that the deity Horus was so constantly represented on the Alexandrian gems as sitting upon a lotus, a plant which was also in itself symbolical of the rising sun. The Hinduism of the idea is very remarkable.

‡‡ Cap. lxxxiii.

§§ Or a species of Nycticorax. Cap. lxxxiv.

||| Cap. lxxxv.

¶¶ Cap. lxxxvi.

which latter form he makes this most remarkable declaration: "O, great one, I have dissipated my sins, I have destroyed my failings, for I have got rid of the sins which detained me upon earth."* Lastly, the deceased, or his soul, assumes the form of a serpent, "the serpent of long years in the extremities of the earth (who is) laid out and born, decays and becomes young daily"; † and a crocodile, ‡ no longer the eater of filth and the opposer of souls, "but the crocodile who dwells in victories, whose soul comes from men, the great fish of Horus." The deceased then traverses the dwellings of Thoth, § who again assists him and gives him his final instructions ere he crosses over the eternal waters which separate the purgatory from the Elysium, ¶ and across which he has to be ferried amidst horrible beings which encircle his way, and leap about, crawl over, and try to upset the vessel. Dangers of the most subtle and insidious kind await him; then a false boatman, the emissary of Typhon, endeavours to seduce him into a wrong boat. Aided by the eye of Horus and the book of Thoth, the deceased detects the treachery, and he and the false guide reproach each other in true Homeric, or rather, barbaric fashion. || At last the real bark of the souls arrives, and, joyful at the sight, the Osirian exclaims,

"I go to pass from earth to heaven,
To go along to the ever-tranquil gods,
When they go to cut the Apophis." ¶

Ere however the Osirian can enter the boat of Pthah, it is necessary to ascertain if he is really capable of making the voyage, if his knowledge of the secret mysteries of heaven is such as will suffice for his safe conduct, if his faith is equal to his knowledge, and his courage to them both. To test this, therefore, the divine boatman puts a series of most singular interrogations to him, to all of which the deceased replies in the character of "Horus, who goes to avenge his father Osiris, and to fight the Apophis." Satisfied with the result of his investigations, the spiritual pilot prepares to weigh anchor, and directs the deceased to enter the boat himself: "Go thou to the place,

* Cap. lxxxvii.

† Cap. lxxxviii.

‡ Hence Thoth was called Nahem, "the Saviour," a title which, still more singular to remark, was never applied to Horus, or indeed to any other deity than Thoth, and then only in rare instances.—See Mariette Bey, *Description du Musée du Boulaq*, No. 136, p. 116, 1874.

§ See for a Jewish allusion to a river in Hades, *Psa.* xviii. 4.

|| Cap. xciii., "The Chapter of not Causing a Person to go to the East from the Hades."

¶ Cap. xcvi., "The Chapter of Leading the Boat from Hades."

live there, it carries thee to the place thou knowest where.”* The deceased approaches, but at the moment of his doing so a most remarkable scene takes place, for every part of the sacred boat—oar, rudder, anchor, prow, mast, ribs, seat—becomes instinct with life, and, with a sudden and loud voice, refuses to let the deceased step into the vessel till he can tell each part of the mystic ship its secret name, as the pledge of his having received his divine knowledge by inspiration, and not by mere study of the sacred books alone. The wind, the river, and the banks of the stream all take their part in this singular colloquy, and exclaim, “Tell me my name”; and woe befall the Osirian if he have forgotten the proper reply to any one of the interlocutors, twenty-three in all. Strong in the sacred wisdom imparted to him by the gods, and invincible in his assumed character of Horus, he is able to reply with satisfaction to all and every one of the questions put to him, and to enter into the boat with safety and with joy. Before doing so, however, he stands for the last time on the shores of the infernal purgatory, and invokes the celestial beings, “lords of truth,” in a psalm as beautiful as it is ancient, and beseeches them to give him grace to partake of the heavenly food in Aahlu,† and to grant him power to perform all the new duties which devolve upon him till the great adjudication before Osiris, when soul and body, a physical, as distinct from a spiritual body hitherto enjoyed, shall await the decision of the deeds done upon earth, whether they be good or whether they be evil.

Having quitted the boat of the river of Hades, the deceased is met by the god Anubis,‡ who conducts him in safety through the devious windings of an intricate labyrinth, and leaves him at the threshold of the judgment-hall of Osiris, the hall of the Two Truths. The title of the chapter in which this scene is described is in itself important; it is called “The Book of going to the Hall of the Two Truths, and of separating a Person from his Sins when he has been made to see the Faces of the Gods.”§ Well may the sight which the deceased has then to witness arouse the strongest emotions of terror in his heart, and drive him more than ever to seek for mercy in the investing character of Horus the Deliverer. High on a nine-stepped throne|| in the centre of the awful hall, under a lofty canopy crested with mystic snakes, the double

* Cap. xcix., “The Chapter of Leading the Boat in or out of Hades.”

† A district in the Egyptian paradise.

‡ Caps. cxiii. to cxxi.

§ Cap. cxxv.

|| The throne of Osiris had nine steps, nine being the great plural to indicate that all mankind would have to be judged by him.

crown of Egypt upon his head, the crook of authority and cross of life in his hands, and the flabellum of justice resting upon his shoulders, sits Osiris Rhotamenti, the inflexible judge of the dead. Beneath his footstool is the opening of hell,—a cavern where, bound and tortured, the wicked bewail their punishment with piteous and unregarded wailings.* At the right and left hand of Osiris stand the sister goddesses, Isis and Nephthys, the goddesses of the upper and lower heavens respectively; in front of him crouches the horrible Typhonic monster guarding the mouth of hell; † and ranged in two rows around the judgment-hall sit the forty-two deities or assessors, ‡ who are to interrogate the deceased, and individually to acquit or condemn him. In the centre of the hall stands a small altar, and beside it a large pair of scales, guarded by the goddess of truth, and the monkey deity sacred to Thoth. Between the deceased and his judges the four deities § of the dead range themselves, each presenting his offering on behalf of the deceased, and blest above all, Horus takes the suppliant by the hand, and pleads his merits for acceptance on his behalf with his father. || Stern and impassable, Thoth, the Recorder, holds out to Osiris the tablet on which is inscribed all the actions of the victim, and Anubis guards the door by which he entered, making retreat impossible. Then, delay and excuse being alike unavailing, the deceased supplicates the court of justice in the following terms :—

“O ye lords of truth,
oh thou great God,
lord of truth,
I have come to thee my lord,
I have brought myself to see thy blessings,
I have known thee,
I have known thy name,
I have known the name of the forty-two of the gods who are
with thee in the hall of Two Truths,
living by catching the wicked,
fed off their blood,
the day of reckoning words before the good being,

* Bonomi, *Sarcophagus of Oimeneptah I.*, plate 5.

† From which the Greeks derived their triple-headed dog Cerberus.

‡ One for every nome of Egypt.

§ The Cabeirii of the Greeks were derived from these deities in their punitive office.

|| On the later sarcophagi, Anubis represents Horus in this scene. Hence we shall presently find in the Alexandrian period Anubis substituted for Horus by the Egyptians, and by a parity of reasoning identified with Christ, also by the Egyptian Christians.

the justified, placer of spirits,
Lord of truth is thy name."

Then, stretching forth his hands to the august tribunal, the deceased proceeds to justify himself from the imputation of actual sin, by a declaration of his innocence,* a declaration which embodies some of the most sublime truths, and inculcates, by implication, the performance of some of the most solemn obligations of mankind.

"O ye lords of truth, let me know ye, I have brought ye truth, rub ye away my faults. (For)

I have not privily done evil against mankind
I have not afflicted persons or men
I have not told falsehoods in the tribunal of truth
I have had no acquaintance with evil
I have not done any wicked thing
I have not made the labouring man do more than his daily task
I have not let my name approach to the boat †
I have not exceeded the ordered (task ?)
I have not been idle
I have not waylaid
I have not boasted
I have not smitten men privily
I have not counterfeited rings ‡
I have not spared food
I have not made conspiracies
I have not robbed the stream
I have not made delays (wilful)
I have not reviled the face of the king or my father §
I have not been inattentive to the words of Truth
I have not failed
I have not ceased
I have not been weak ||
I have not done what is hateful to the gods
I have not slandered the slave to his master
I have not sacrificed ¶
I have not made to weep
I have not murdered
I have not given orders to smite a person privily

* This has since been called the negative confession.

† Lacunæ. The next sentence is also obscure.

‡ An offence punishable with death still in the East.

§ "Thou shalt not speak evil of the ruler of thy people."—Exodus xxii. 28.

|| In matters of faith.

¶ That duty belonging to the priests alone. Cf. the cases of Uzziah and Saul in the Old Testament.

I have not done fraud to men
 I have not changed the measures of the country*
 I have not injured the images of the gods
 I have not taken scraps of the bandages of the dead†
 I have not committed adultery
 I have not thrown down
 I have not falsified measures
 I have not polluted myself
 I have not played the hypocrite
 I have not cheated in the weight of the balance‡
 I have not thrown the weight out of the scale
 I have not withheld milk from the mouths of sucklings
 I have not hunted wild animals in their pasturages §
 I have not netted sacred birds||
 I have not caught the fish which typify them (?)
 I have not stopped running water¶
 I have not put out a light at its proper hour**
 I have not robbed the gods of their accustomed haunches
 I have not turned away the cattle of the gods††
 I have not stopped a god from his manifestation‡‡
 I have not despised a God in my heart
 I am pure! I am pure!
 I am pure, I am pure! . . .
 Let no evil be done to me in the land of Truth
 Because I know the names of the gods§§ who are with thee
 in the Hall of Truth
 Save me from them."

* Cf. Deut. xxvii. 17, "Cursed be he that removeth his neighbour's landmark."

† Linen being dear, and the mummies being enrolled in large quantities of wrapping, there was always an inducement among the poorer orders to commit sacrilege for the sake of the grave-cloths.

‡ The steelyard as distinct from the scales, both being used by the Egyptians.

§ Or as we should now say, in the close season; perhaps the earliest indication of a game law in history.

|| To this day the stork is sacrosanct in Holland, and is, I believe, protected by law.

¶ Each proprietor was allowed to retain the water of the canals on his lands for a stipulated time only.

** Probably, as in ancient England, each householder was obliged to keep a light burning in front of his house during the night for the benefit of travellers.

†† Which, like the sacred cows of India, had a right to wander and feed wherever they pleased.

‡‡ Hindered the sacred procession, when the deity was exposed in his shrine "to the veneration of the faithful."

§§ The avenging assessors.

Having made this general expurgation, the deceased then addresses each of the forty-two assessing deities individually, calling each by his mystic name, which was among the instructions previously whispered into his ear by the god Thoth, and then declares himself free of each of the different sins of which the different deities were singly to accuse him. Strong in the strength of Horus, the deceased is able to justify himself from all their demands, and they in their turn one after another acquit him with the welcome phrase, "Thou mayest go, thou art justified." Then ensues a repetition of the remarkable dialogue which took place at the shores of the river of Hades, for every part of the hall of judgment, floor, lintel, sill, door, &c., refuse to let the deceased pass by it till he has first told them their names. This as before he is enabled to do, and he then prepares to address himself to Osiris.

All the while that the deceased has been answering the interrogations of the assessors, his heart has been weighed in the balance by Thoth and Thmei,* against a feather, the symbol of truth, while Horus pleads for his acceptance, and the funeral deities Amset, Hapi, Tautmutf, and Kabhsenuf offer themselves as propitiatory oblations. In some cases Horus himself takes hold of the deceased and leads him before his father, and he always has at hand the great white robe called the robe of righteousness,† with which he waits to invest the deceased after his trial is over. Soon the last question has been asked and answered, the assessing avengers express their satisfaction, Isis and Osiris spread open their wings to admit the deceased to Elysium, and Horus triumphantly robes him in the typical dress, and the awful assembly with one voice declares to him :

"Go forth, you have been introduced,
Thy food is from the Eye †
Thy drink is from the Eye.
Thy meals are from the Eye.
The Osirian has been justified for ever."

Henceforth his happy lot in the eternal life will be as one of the gods, nay, more, as Horus himself, to enter into the closest communion with them, to have revealed to him the highest mysteries, to go to the visible Sun, and to become one of "the gods of the orbit,"§ to pass unchecked from region to region of heaven, paradise, and the abyss of eternity, to become more and

* The goddess of truth, the Themis of the Greeks.

† A specimen of this robe in the Hay collection was sixteen feet long. See *Proceedings Soc. Antig. Lon.*, Second series, vol. xv.

‡ Of Horus.

§ *Ritual*, caps. xxvi.—xxx.

more assimilated to the divine essence, and at last, having passed almost an eternity in that blissful state, to lose all self-identity, and to be again emanated from the Supreme Being as another soul, to live the life of another mortal upon earth, and again to be saved and strengthened by Horus the Deliverer. "Et per sæculorum sæcula."

In connection with this great province of Redemption and of protection against all the attacks of venomous beasts, must be mentioned the amulets sacred to Horus, the stopper of snakes and the stopper of crocodiles. In many of these little statuettes representing Horus the serpent-headed, may be traced ideas and analogies which have been pictorially handed down to us by Christian artists. Horus treading on the head of a snake, whose sinuous body is wound around his own, is a subject in close agreement with those old wood blocks which were used by the Christian Knowledge or Tract Society, which represented our blessed Lord as a child similarly trampling a snake under his foot, in fulfilment of the prophetic promise, "thou shalt bruise his head and he shall bruise thy heel."* The snake twined around the cross, another common Christian monogram, and even the snake with his tail in his mouth, are all forms of the same idea derivable from the same source.

In order here to concentrate the phases of the life of Horus which I have hitherto presented to you, I will ask you now to allow me to read a general summary of his various offices which occurs in a hymn to Osiris, dated, according to M. Chabas, who has translated it, from the XVIIIth Dynasty. I must begin with a brief sentence relating to the goddess Isis.

"She had a child, she suckled the baby in loneliness of heart, in secret, none knew where that happened.

"The arm (of the child) has become strong in the great dwelling of Seb.

The gods are joyous at the arrival of Osiris (in his son),

son of Horus, intrepid,

Justified, son of Isis, heir of Osiris. The divine chiefs join him, the gods recognize the Omnipotent child himself.

The Lords of Justice there united to watch over iniquity and sit in the great dwelling of Seb

are giving authority to its lord. The reign of justice belongs to him,

Horus has found his justification, to him is given the title of his father;

* Gen. iii. 15.

he appears with the royal fillet* by the orders of Seb. He takes the royalty of the two worlds,
the crown of the upper region is fixed on his head.

He judges the world as he likes ;
heaven and earth are below the place of his face,†
he commands mankind—
the intellectual beings,
the race of the Egyptians
and the northern barbarians.

The circuit of the solar disk is under his management ;

The winds, the waters, the wood of the plants and all vegetables. A god of seeds, he gives all herbs and all the abundance of the ground. He affords plentifulness, and gives it to all the earth. All men are in ecstasy, all hearts in sweetness,

all bosoms in joy,
all persons are in adoration,
every one glorifies his goodness, for mild is his love for us, his tenderness surrounds our hearts ;

great is his love in all breasts. . .

Sanctifying, beneficent is his name.

Veneration finds its place (for him),

immutable respect is for his laws ;

the path is open, the footpaths are opened,

both worlds are at rest ;

Evil flies afar off, and the earth brings forth abundantly under her Lord.

Justice is confirmed by its Lord, who chases (away) iniquity.

Mild is thy heart, O Unnefer, son of Isis ;

He has taken the crown of the upper region ; to him is acknowledged his father's authority in the great dwelling of Seb ; ‡

(he is) Ra when speaking, Thoth when writing ; the divine chiefs are at rest.

What thy father Seb has commended for thee, let that be done according to his word, Amen." §

Many of these sentences, as they occur in a hymn to Osiris, have a direct reference to that deity also, which, considering his peculiar oneness of nature with his redeeming son, is not to be wondered at. Neither are the parallelisms to certain sublime passages in the book of Psalms and the later chapters of Isaiah to be considered extraordinary ; they all spring from the same intense unsatisfied yearnings of the human heart after God which is prompted, let us believe, by the inspiration of

* The Atef crown (or diadem).

† Or "are beneath his eye."

‡ This means the earth.

§ See *Records of the Past*, vol. ii. pp. 102-3.

the Holy Spirit, and whereby the souls of men are led, as Longfellow beautifully writes, to prove that—

“There are longings, yearnings, strivings,
For the good they comprehend not,
That the feeble hands and helpless,
Groping blindly in the darkness,
Touch God's right hand in that darkness,
And are lifted up and strengthened.”*

Before I proceed to show how these Horus myths have influenced Christian thought, and in what way, I propose that the Christian should regard them as evidences for the truth; ay, and more than the truth, the superiority and perfect fitness of that religion which philosophical scepticism would fain sneer us out of,—there are two other incidental characteristics belonging to the office of Horus, two characteristics not sufficiently distinct to be classified by themselves, as they are, in a manner, outgrowths of the preceding, and which yet must not be entirely overlooked in our examination of the multifold divinity of Horus Ra. These two are Har-Hut, or Horus the good spirit, and Horus An-Mautef, or Horus the husband of his mother; in other words, Horus the producer of the physical germ of life, a subject upon which there is little to be said, and that little must be still more briefly related. Both of these attributes, or minor deifications, are in the *Ritual* and Magical texts merged into the three greater hypostases.

Since the Egyptian mythology resolved all material objects into one great whole, which was held together by an all-wise, all-pervading spirit, and since they regarded that all-wise and all-pervading spirit to be one and the same in its essence as the great soul itself, it was also natural to consider Horus in his character of the spirit of his father, as being also the spirit of all things and the preserver of the universe. In that attribute, therefore, they symbolized the Deity as a winged disk, the Agathodæmon of the Greek writers, furnished with wings to imply protection, and having dependent from it the sacred basilisks bearing the emblems of life and power. This was the mysterious figure which hovered over the entrance of every temple doorway, and which formed the finish of every funereal stelè; sometimes, though but very rarely, in lieu of the solar disk the Deity was represented with a human head, and occasionally in the solar orb was sculptured the life-creating eye of the divinity, an emblem which, however, was more usually placed below the wings, but immediately above the vignette which

* *Song of Hiawatha*, canto I.

headed the stelè, and which was, in almost all instances, followed by an act of adoration to Osiris Ra, Anubis, or the funereal gods.*

In this his attribute of Harhut the spiritual deity of Horus was insensibly merged into the form of the god Khnum, or Khnef Ra, the former of the universe, and the source of all its vitality; there was, however, this differentiation between the two spiritual beings, viz., that Harhut was considered as the son of Harkhuti, or Osiris, both being in themselves hypostases of the sun-god Ra, while Khnum, or Kneph, was, properly speaking, a form of Amen Ra peculiar to Nubia and Upper Egypt, where he formed one of the triad with the goddesses Sati and Anuke. Like Horus, he was regarded as the deity of the vivific heat of the sun, and he was therefore called the "soul of the gods," and was represented as a ram-headed deity crowned with the sacred Atef crown. His more usual title was, however, the maker of gods and men, and the hieroglyphic pictures often represent him as sitting at the potter's wheel, fashioning the mysterious cosmic egg in which was the germ of human life, and indeed of all nature.† Nothing could more aptly figure the expression of the prophet, "We are the clay, and thou art the potter; we are all the work of thine hands."‡ I am myself inclined to think that while the spirit Harhut was always assimilated with Horus, the deity Kneph was associated with him at another and a later period in history, since as is well known that the great Theban and Nubian deity Amen Ra, of whom Khnum, or Kneph, was the symbolic spirit, occupies a very subordinate position in the *Ritual of the Dead*, and, indeed, is hardly mentioned in its earlier chapters; I suggest, therefore, that this identification took place after the rise of the XIXth Dynasty, and assumed importance chiefly in that of the XXIInd, when, under the Ethiopian Pharaoh, Piankhi-Mer-amen, Upper Egypt held out against the Icosarsarchy, which had been established by the Assyrians under Esarhaddon in the Delta.§ This is, however, simply a personal speculation, and I place it before you only as such, and as a suggestion for future studies.

The last of the secondary attributes of Horus with which I have to deal, is that in which he became considered as the author of physical life, one and the same with the deity Khem, or Amen Khem [the ithyphallic deity], and in which he was called

* Sharpe, *Egyptian Mythology and Egyptian Christianity*, p. 82, fig. 86.

† Hence his identification by the Gnostics with their serpent deity Chnuphis, whose name was a corruption of that of Kneph.

‡ Isaiah lxiv. 8.

§ See Lenormant, *Manual of Ancient History*, i. p. 278.

the Bull, or husband of his mother.* Here again, there seem to have been two originally distinct conceptions of divinity blended into one. According to the theology of Upper Egypt more especially, Khem was the deity of reproduction, primarily of human, but also secondarily of animal and vegetable life, and in that aspect he had a form analogous to that of the Priapus of the Greeks, but his religious rites were at no time similarly as obscene. Khem was always represented as standing upright, and with his right arm upraised, near to which was the sacred flagellum or thrashing instrument; his left hand was close to his body, which was tightly swathed in a thick, almost mummied dress; he wore the two upright plumes of Amen Ra upon his head, and a rich enamelled collar, or uskh, around his neck. He was supposed to represent the principle of life, which lay dormant in the body of the deceased, submitting indeed to rest but not to death; and hence in the *Ritual*,† the deceased is made to exclaim, "When my soul is reunited to my body, I shall prevail against my bandages, and I shall have the freedom of my arm bestowed upon me." In other words, the connection of Khem with the human body was symbolical of the divine life, only half arrested by the bonds of death, and of the energetic powers of Nature, held in temporary bondage by the frost of winter and the darkness of night.‡ These things being so, it was a natural sequence to the Egyptian mind to blend Horus, the spirit of deity and the soul of nature, with Khem, the source of reproduction and the soul of life, the title of husband of his mother, applied to both deities alike, since each was, in one aspect, a child of the visible heaven, Horus of Isis, and Khem of Nu; and the identification of Khneph, the soul of the creating power of the Divine Being, was also a perfectly congruent circumstance since the inter-blending of characters and genealogies in the Egyptian Pantheon was so great as to enable almost any deity, however distinct, to associate himself with or take the place of, and be honoured with the epithets, worship, and sacrifices of another.

Finally, I must notice a series of exceedingly common magical stelæ, which are now called Cippi of Horus, and in which the various characters of the multiform deity are more or less distinctly represented. These sacred objects, which are found in all museums, are generally wrought in serpentine, and they

* In the early period, when the *Ritual* was written, though the lion was known, the bull was the largest animal with which the Egyptians were familiar; hence they used it as a superlative epithet applied to the deities and great men.

† Cap. cxlvi.

‡ See Pierret, *Dict. d'Archéologie Egyptienne*, art. Khem.

always represent the deity Horus the child as a naked boy standing upon the backs of two crocodiles, which turn back their heads, and holding in his hands a scorpion, a lion, two serpents, and a gazelle. To the right and left of him are generally two standards, dedicated to the two forms of the sun, and over the deity is the monstrous head of the god Bes, with his tongue protruding. The field of the stelè is generally filled with a magical formula, almost always badly written.



The god Horus is called upon them "The Old Man who becomes Young"; and from hence it is supposed that the idea arose of the eternal youth of the victorious divinity at the time of death, or another form of expressing the resurrection under the type of the rising sun. The crocodile could not turn his head; it was to the belief of the Egyptians a symbol of an impossibility; therefore, as the god was to grow young again, he trod that emblem under his feet, for he had triumphed over death, and had made the crocodiles of darkness (so used in the *Ritual of the Dead*) to turn back their heads. The monstrous head of the god Bes is believed to have been intended to signify the destructive powers of nature, so that the ever-young Horus might be supposed to complete the cycle of eternity in himself. There are a great number of these stelæ in existence, and they were at one time thought to have had an astronomical significance; then, by later scholars, to have been intended as amulets to protect the wearer or possessor from the attacks of dangerous animals; but the explanation which I have now given on the authority of M. Chabas is generally accepted as being the most satisfactory.*

* One of these cippi is engraved in the author's *Serpent Myths of Ancient Egypt*, fig. 108, p. 64.

Such, therefore, was the character, the office, and the filiation of the great benevolent deity of the Egyptians—of Horus, Only-begotten son of his Father, the God of God, the Anointed and the Deliverer. All the Egyptian literature bore testimony to him, all Egyptian life and art was moulded by his influence. Unlike the Hindu Khrishna, no puerile miracles or eccentric acts rendered his power ridiculous. No obscene lasciviousness or violent passions made his divinity disreputable, or degraded his human character, ever obedient to the will of his father, ever energetic in the welfare of others, ever unswervingly the antagonist of evil, ever triumphantly the vicarious redeemer and justifier of the righteous souls. Mysterious in his origin, noble in his performances, and eternally God in his future, such was Horus, rightly enough conceived by the Egyptians as the beloved of his father and the eternal Word. Contrasted even with the holy Saddarthra of Budhistic faith, his was no life of passive sanctity or apathetic self-control. Viewed in comparison with the fraudulent Cyllenius * of the Greek poets, how vast is the difference, and how splendid is the contrast. One deity and one alone surpasses him, and of him was Horus the highest type of unrevealed religion, and that one is the true Messiah and the Word of God, the only true Redeemer and the Prince of Peace. Beyond a certain point of contact with Christ and Horus, all real parallel fails, but that is solely because a special divinity hedged around the tenets of our faith, and preserved almost uncorrupted the books wherein those tenets were contained for us, who are the heirs of the ages in the latter days.† We cannot deny, and we must not ignore, the facts of Egyptian mythology, we must not be unduly alarmed; and, still more, we must not be unwisely eager to explain them; it is ours to wait and hope, to adore the mercy of that great Being, the common father of all mankind alike, who saved at all times certain great truths from oblivion, by the mercy of a transmitted tradition, and who has reserved for us the transcendent glories of a better and a perfect revelation. "Before Abraham was I am,"‡ said our blessed Lord; and before Terah and Heber were born was there a patriarchal church, whose ruined but still beautiful stones we may now discover even in the *débris* of an Egyptian temple. Let us preserve those archaic fragments of divinity with reverent care, let us clear away the rubbish, let us bring their surfaces once again to light, and make even their scattered remnants strengthen the foundation of the Church of God. It is your province, as members of this Institute, founded for the elucidation of

* See Homer's *Hymn to Mercury*. Translated by Hole, 1310.

† Rom. iii. 2.

‡ John viii. 58.

the word and works of the Most High, to work with the materials which I, a feeble explorer into the darkness of antiquity, have the privilege to bring before you. I ask you neither to accept my statements, or to follow my assertions and conjectures, but to take my facts and to examine them for yourselves, remembering always that soon, very soon, if the work is not undertaken by those who believe in the Bible, it will be caught up by those who are inimical to it, and that a painful reproach will be incurred, and an opportunity of expounding the Word of God be lost for ever. In the remainder of this paper—and that remainder will not be a long one—I shall confine my attention to certain indications afforded us by the Gnostic gems and early Christian works of art, of the influence of the Horus myth upon Christianity, and where that influence was, I contend, prejudicial. Would that I could also show, what hereafter a collation of the Egyptian papyri will, I confidently anticipate, prove,—in how far, and up to what period, the Jewish and Christian faiths influenced and purified the Horus myths themselves, even as we know that the Greek philosophy did so; but this task must be reserved for an abler head and a more spiritual pen than mine. Of one thing, however, I am certain, from what little I know of patristic theology, that a deeper insight will be given to the writings of Origen, Cyprian, Tertullian, and Epiphanius, and the Alexandrian fathers generally, when the whole of the Horus legends shall have been collated and rendered into English, and their respective dates fixed, beyond the reach of criticism. Even the *Ritual of the Dead* itself, although written in part in the IVth Dynasty, continued to receive rubrics, and glosses up to the XXIXth, if not, indeed, to the time of the Roman conquest; and many of these additions and alteration shave, by the heedlessness of perfunctory scribes, been incorporated with the earlier text to a degree which it is impossible at present to probe. What has been done with the *Ritual* has been done with the *Book of the Under World** and the Solar and Horus litanies also, which last were constantly being added to, and of which the longest texts were written in the time of the Roman emperors Claudius and Vespasian.

Perhaps one of the most apposite illustrations which I could produce is to be found on an early Christian lamp from the catacombs of Alexandria, now in the Boston Museum. This singular relic is one of the usual lucernæ; but the interesting feature of it is a large Greek cross, which completely divides it into four sections, in the two lower of which is placed the *cruz*

* See Deveria, *Cat. des Manuscrits du Musée du Louvre*, for an excellent *précis* of this most mysterious book.

ansata, or the mystical cross of life, which was always held in the hands of the Egyptian gods and goddesses, and which the good spirit applied to the lips of the mummy to bring it again to life. There is no inscription accompanying these figures, but their significance and the adaptation of Egyptian sacred emblems to Christian purposes is clear enough (fig. 1).*

Another and a similar lamp, in which the double symbolism is more ingeniously united, is figured in by Denon.† It is, like the preceding, of terra-cotta; but the principal cross is the *crux ansata*, the looped portion of which surrounds the mouth of the lamp, and the central stem is extended upwards, so as to resemble a Greek cross also. The lamp was found at Denderah, and bears no inscription (fig. 2).

The ideas which were indicated are positively declared in a bas-relief on the walls of an early Egyptian church at the Memnonium, a subject which is also figured in the great French work upon Egypt.‡ This bas-relief represents Christ sitting upon a throne with the horned disk of Horus, and a modification of the staff of Osiris; even to the characteristic features of the Egyptian deity, the identification is complete; and though there are some minor differences of detail in the dress and costume, they are simply those differences which would arise from the more natural treatment of the human figure and its vestments which was characteristic of Greco-Egyptian art (fig. 3).

When we recollect the province of the deity Kneph, as assumed by Horus, we shall be better able to understand why the early Egyptian Christians contented themselves with adopting the rock temple of Kneph, the good spirit at Abu, suited to the purposes of a Christian church, by simply painting a figure of our Lord, with a glory round His head, on the ceiling, in the place of that of the ancient divinity, and thus consecrating the Pagan edifice. The same idea led them also to convert the Temple of Seboua, in Nubia, into the Church of St. Peter, by filling up with plaster the bas-relief of the god Amen, and painting over it the figure of the apostle of the Gentiles, with the legend ΑΠΟΣΤ.ΛΟΥ + ΠΕΤΡΟΥΣ, leaving, however, the figure of Rameses II. beside him on the wall uneffaced, so that the ancient monarch of the XIXth Dynasty appeared to be presenting the accustomed offerings to the Christian saint.§

The earnestness and simplicity of belief of the Egyptian Christians arose from a very natural source, but it soon led them

* Figured in *Proceedings of the Society of Antiquaries*, London, second series, vol. xv.

† *Egypte*, vol. v. pl. 73.

‡ Denon, *Egypte*, vol. ii. pl. 36.

§ Sharpe, *Egyptian Mythology*, p. 108, fig. 102.

to be considered, as indeed they soon became, heretics, by the Western Church. As Sharpe has well observed, albeit I cannot agree with his conclusions, "Of the Pagan nations best known to us, the Egyptians were the most real believers in a resurrection from the dead, in a day of judgment, and in a future state of rewards and punishments: through these doctrines a wide door was opened for the entrance of Christianity. Having been polytheists, they readily received Jesus as a god in the place of some of their own; and that He should have been put to death by His enemies could present no difficulties to their minds, as they had always been taught that their own god, Osiris, had died by an equally cruel death. A dying god was one of the great facts in their religious philosophy, and though they rejected their old gods, they could by no means so easily reject their old opinions. However, the despised Egyptians, on owning themselves Christians, and submitting to baptism, were at once received as equals into the society of the Greek Christians; they were raised, not legally, but socially, from slaves to be free men. That any of the Greeks, their masters, should take the trouble to preach to them, to persuade them, to try to win them over to their own views of religion, was an honour which they had never before received, and as they owed it to Christianity, they cannot but have been led to look upon Christianity with favourable eyes."*

When I last read a paper before you upon Egyptian serpent-worship, I cited then an Egypto-Gnostic gem, which I must again bring forward to-night; it bears no inscription and it has no indication of its double character other than the attitude of the central figure: look at it. There is a youthful male figure standing upon the back of a crocodile, and holding a fish above his head, around which there is an halo. The general idea is the same as that of the Horus cippi which I have previously described, but there are several points of detail in which it differs from them. The Christian Horus stands upon one crocodile only, but which does not revert its head. Hence the Egyptian mystical symbolism is lost sight of. On the other hand, the human figure holds a fish, the well-known ideogram for the sentence, "Jesus Christ the Son of God," and the other hand, which ought to hold a serpent or a sceptre, is left free; in fact, both theologies are improperly symbolized, and yet there can be no question which it was the intention of the artist to represent: it is a capital illustration of the incomplete fusion of the two faiths (fig. 4).†

Another Gnostic gem, probably of a still later period, and which is engraved by Montfaucon, is an intaglio head of our

* Page 90.

† *Serpent Myths of Ancient Egypt*, fig. 126, p. 71.

Lord with closed eyes, long hair, short beard, of the catacomb type, and a generally sad expression ; on His head is a leafy diadem, and from behind issue the forked thunderbolts of the Roman deity Jupiter Tonans ; above this again, and resting immediately on the diadem of leaves, are two cow-horns, and between them a very imperfect representation of the peculiar vasiform centre-piece, or cap of the Atef crown peculiar to Osiris, and which was bestowed upon Horus Ra for his filial obedience (fig. 5).*

Another and very remarkable gem is engraved in the De Wild collection. It represents the Gnostic deity (AΩ), whom they regarded as the Jah Sabbaoth of the Pentateuch, standing, Horus-like, upon a crocodile, holding in his left hand the sacred staff, and in his right hand the *crux ansata*. The deity is ithy-



FIG. 4.

phallic, and has the head of an ibis. Right and left of him are two birds, probably intended by the artist to represent human souls, two scorpions, symbolic of the powers of evil, and over his head the Eternal Spirit in the form of a winged scarabeus : by his feet are crouching two serpents, the Uraeus and Cerastes respectively, and on the bevelled edge of the gem are the names of the four chief archangels, Michael, Uriel, Suriel, and Gabriel. Thus, then, there are in this little amulet,—for as such the gem was intended to be used, evidences of the fusion in the Alexandrian Church of the essential elements of these great religions, Egyptian, Jewish, and Christian ; and among these the Egyptian idea is predominant. The representation of the great deity Jehovah, under the attributes of Horus the Avenger, and

* Montfaucon, *Antiquités*, vol. ii. pl. 162.

Horus Khem, the god of reproduction, the Holy Spirit hovering over his head in the form of the scarabeus; of Kheper Ra, the cross of life, and the head of the god Thoth, the god of letters and of wisdom, all attest with how ingenious a subtlety the half-informed Alexandrians blended together the false and true, and showed how difficult it was to dissociate the personality of Horus from the character of the Creator himself; and doubtless this confusion of dogmas and persistency of heretical ideas was one of the chief obstacles with which the great Athanasius had to contend, and which precipitated the disunion between the Eastern and the Western churches (fig. 6).*

In another gem, also of Gnostic origin, is an evident allusion to the Horus myth. This represents the Deity sitting upon what I presume is meant for the symbolical lotus, the emblem of the new birth. He holds his right hand to his mouth, and his head is surrounded with a radiated glory, thus ingeniously combining the characteristics of the radicle crown of Knuphis, the circular nimbus of the early Christians, and the general pose of the Egyptian Horus. The gem has been engraved by King (fig. 7).†

Let me cite another example, also taken from King.‡ It is a description of an octagonal sard intaglio, which represents "the Good Shepherd bearing upon his shoulders the lost lamb, as he seems to the uninitiated eye; but, upon closer inspection, he becomes the double-headed Anubis, having one head human and the other a jackal's, whilst his girdle assumes the form of a serpent rearing aloft its crested head. In his hand is a long hooked staff. This figure had, without doubt, two meanings; one obvious for the vulgar, the other mystic and recognizable by the initiated alone. It was perhaps the signet of some chief teacher or apostle among the Gnostics, and its impression one of the tokens serving for mutual recognition mentioned by Epiphanius." It should also be added, that the tail of the sheep which is carried on the shoulders of the chief figure is ingeniously made to resemble the fiabellum of Horus Khem (fig. 8); thus adding another point of contact in the Horus myth.

Again, on the reverse of another Abraxas gem, in the same work, is "represented Horus seated on the lotus. On the bevelled edge of the stone is engraved **CEMEC EIAAM**, the eternal sun. An address, explained by Macrobius's statement that Horus was but a name of the sun at a particular period of his course." § The gem is engraved on green jasper, a

* Wilde (Jacobi de) *Signa Antiqua*, 1700. pl. 31, fig. 116.

† King, *Gnostics*, pl. ix. fig. 3, and Text, p. 220.

‡ *Ibid.*, pl. i. fig. 8, p. 201.

§ *Ibid.*, pl. vii. fig. 4, p. 216.

material in which many of the Horus amulets are wrought, having reference to the doctrine of the new birth or the second mortal vegetation in the land of the Ker neter.

Note again, another representing Horus in his usual attitude, with the flabellum, seated upon the lotus. On the right and left of him, indicating his Christian identification, are the well-known symbolical letters AΩ, the Alpha and Omega of the Revelations. These letters have been wrongly read by King,* as forming the sacred name IAΩ, which they do not in this instance, as the I is wanting.

Another Gnostic gem which I shall next describe is perhaps less obviously Christian,† but the style of art leaves its character little open to question; it represents a scarabeus with a human head surrounded by a starry glory, and with two human heads in lieu of the fore legs, the whole being inclosed by the serpent Chonubis forming a circle by holding his tail in his mouth (fig. 9). The human-headed scarabeus, though rare, is not singular among the Egyptian scarabei; there were two such in the Hay collection, and I think that there are several others in the British Museum. The artistic details, however, deserve notice: the face is turned completely round, and the heads are spread out in an attitude of benediction, while at the same time the back of the beetle's body alone is figured; the whole drawing sadly lacks conventionality, and, regarding the design from its various aspects, I cannot but decide that it is intended to represent our Lord, as Horus Kheper, the good scarabeus, more especially as that very phrase was used by St. Ambrose some two centuries later, when he described Jesus as the good scarabeus who rolled up before him the hitherto unshapen mud of our bodies,—a simile directly taken from the Egyptian myth of Horus, and illustrated by this gem, although, as far as the ball of the scarabeus or the sun's disk is concerned, the simile was by the Western bishop of Milan by no means accurately applied.‡

Some considerable interest was manifested a few years ago in the explanation of the rude sgraffiti which was discovered on the walls of the cell of a slave in the palace of Mount Palatine at Rome, representing an ass-headed man in an attitude of crucifixion; beside him stood a worshipper, in front of whom was roughly scribbled the sentence: AΛΞΑΜΕΝΟC CEBETE TON ΘΕΟΝ, or, Alexamenos worships (this) god;§ a satire which recalled at once the accusation brought by Apion

* King, *Gnostics*, pl. xl. fig. 1, p. 224.

† Montfaucon, *Antiquités*, vol. ii. pl. 154.

‡ Sharpe, *Egyptian Mythology*, p. iii.

§ King, *Gnostics*, p. 90.

against the Jews, of whom the Christians were by the Romans regarded as a sect, of worshipping an ass, and of a golden head of an ass being preserved in the Holy of Holies at Jerusalem.* The following Gnostic gem, which has, I take it, evident reference to the Horus myth, will possibly throw some light upon the subject of the accusation. This gem represents Horus holding the flagellum of Khem, and which was no doubt intended for the Cucufa sceptre of Osiris.† He is dressed in the short Egyptian loin-cloth or *shenti*, and on his head are the horns of Isis and the serpent of Khneph, the spirit. The head is, however, unmistakably equine or asinine, with a well-defined mane falling on to the shoulders.‡ The art of the sculpture is not Egyptian, but Western, possibly therefore Roman; and though I am unable at present to explain the myth or intention of the head, yet there can, I think, be no doubt that both the gem and the sgraffiti have reference to Christianity, and that if, from some reason to us now unknown, the Egyptian Christians so represented Horus, the analogue of their Christ, it was only natural that the Roman caricaturist should draw the figure described as an emblem of our Redeemer.

This identification of Anubis with Horus, and by consequence with Christ, is one of the chief points of interest in King's very interesting but somewhat confused treatise on the Gnostics and their remains. That he was able to trace the substitution of Anubis for the Christian Saviour was a felicitous accident, and a gem which he has engraved, and the description of which I shall quote in his own words, fully supports this theory.§

"Iao, with the *jackal* head of Anubis,|| and therefore to be regarded here as assuming the office of the latter, the conducting departed souls to the judgment-seat. This image, in such an acceptation, was adopted to typify their Christos by some among the Egyptian Gnostics, a fact explaining Tertullian's allusion, and the votive picture of Alexamenos."¶ The allusion cited from Tertullian is, "Like many others you have dreamed that an ass's head is our god, but a new version of

* See Josephus *contra Apion*, lib. ii. secs. 7 and 10.

† A peculiar kind of sceptre, having the head of an unidentified horned animal at the top, and a kind of double hook at the end. It was the peculiar sceptre of the male gods of Egypt.

‡ Montfaucon, *Antiquités*, vol. ii. pl. 154.

§ On an Egyptian mummy, of the period of the XXVIth Dynasty, belonging to the Duke of Sutherland, which was unrolled on the 15th of July, 1875, at Stafford House. The god Anubis was represented as taking the deceased by the hand and performing the office of Horus in the Hall of the Two Truths. || But evidently an ass's head (Westropp).

¶ King, *Gnostics*, pp. 232 and 91. The quotation from Tertullian is from Apol. xvi.

our god has lately been made public in Rome ever since the time that a certain hireling convict of a bullfighter put forth a picture with some such inscription as this—the God of the Christians, **ONOKOIHΘHΣ**.* He was there depicted with the ears of an ass, with one of his feet hoofed, holding in his hand a book, and clad in the toga.”

There is another gem to which I must also call your attention. It is, unfortunately, of the rudest possible workmanship, and some of the details are merely indicated; but I think I am not wrong in assigning it to the Horus Christian class.† It represents an ass or dog-headed man, with a staff in his right hand, treading upon what seems to have been intended for a crocodile; to his right is the sacred Uræus serpent. At his feet, on the left, sits the deity Thoth, or rather the cynocephalous monkey of Thoth, an animal which you will recollect plays so prominent a part in the psychostasis in the Hall of the Two Truths, and in the Egyptian Karr or Hell. Higher up in the scene is the hawk (here rendered into an eagle) of Horus; and what seems meant to represent the scarabeus of Kheper Ra. Over the head of the principal figure is a scorpion. The idea is, of course, taken from the previously described cippi of Horus, where, instead of the scorpion, is sculptured the head of the Typhonic monster Bes. As you will see, the head of Horus is something like that of an ass, and indeed he may be Horus Anubis, the jackal-headed god of the dead, whom I have already referred to (fig. 10).

These illustrations will now, I think, suffice for the purpose that I have in view,—the purpose of proving that the works of art, the ideas, the expressions, and the heresies of the first four centuries of the Christian era cannot be well studied without a right comprehension of the nature and influence of the Horus myth; and that it becomes every student, or at all events every expositor of the Book of books, to examine this myth, and work out its operations for himself. Of its immense antiquity there can be no reasonable doubt; equally so can there be none of the extent to which the myth has been modified by the Classic, Jewish, and Christian theologies, although we are not yet in a position to separate the true from the false, and to assign to each interpolation or interpretation its proper place in the chronology of mythology. We cannot, I repeat it, ignore these facts. We have, as Christians, no reason to be afraid of them. As philosophical scholars we are bound to make use of the materials brought ready to our hands in the records of the past, and as true believers in the co-eternal divinity and redeemership of our blessed Lord, we should be impelled

* So in King.

† Montfaucon, *Antiquités*, vol. ii. pl. 154.

by our responsibilities to be the first in the field to illustrate our faith and confirm our religion on the plan adopted by the Victoria Institute, while we have the opportunity to do so. Time would fail me, even did not your patience do so, to go further into this topic; let it suffice that my paper be regarded as suggestive, and not exhaustive. I look to the theologians to follow up the scheme which I lay before them, and I wait with some anxiety the discussion which I hope will follow the reading of this exposition of the Horus myth. I am very desirous that the subject should be well discussed, and that I should be permitted to hear the views of all parties, however antagonistic those views may be. Let some irritable critics and impatient authors say what they please, the value of the sheaf depends upon the grains in the ear, and they can only be well extracted by a steady and vigilant thrashing; therefore—oh ye bulls of Amen*—to apply to the scholars present an Egyptian idiom, and to conclude with an Egyptian song,—here I throw down at your feet a sheaf of Horus wheat, gathered from the ancient plains of the Aahlu in the Kerneter.† Therefore—

Thrash, oh ye oxen,
 Thrash, oh ye oxen,
 Thrash, oh ye oxen, thrash away faster;
 The straw for yourselves,
 The straw for yourselves,
 The straw for yourselves, and the grain for your master.‡

APPENDIX.

EGYPTIAN SECTS.

In the interpretation of these mythical texts there is a point to be taken into consideration, the materials for which are almost wholly wanting; that is, the existence of sects among the Egyptian devotees. That there were such religious distinctions, the *Stèle of the Excommunication*, of the date of the XXVIth Dynasty, affords us evident proof, and there are indications of other sects having had influence also, but of the nature of these sects, save that of the Tumpesi (a sect who were forbidden to eat raw meat—See *Records*

* A metaphorical expression applied to the Egyptian chief priests of Amen Ra.

† The best Egyptian wheat was popularly called Horus wheat, by the ancient Egyptians.

‡ Champollion, *Lettres écrites sur l'Égypte*.

* The Emperor Domitian was the last person to whom the title "Horus, son of Isis, the man God," was applied. This appears on the obelisk in the Piazza Navona, at Rome.

of the Past, vol. iv. p. 93), nothing has been discovered : but it would be wholly contrary to human experience to suppose that in a religion which flourished for more than 3,000 years there were no important variations of faith such as would constitute distinct creeds with subtly-defined systems of exposition. We have unfortunately only the orthodox texts, which were probably, I might almost write certainly, accepted by all parties. How these texts were interpreted by the various bodies of sectarian teachers within the Egyptian clergy we have no means of knowing. Judging from the analogy of Christianity, while Protestants, Roman Catholics, and Anglicans agree in accepting the Bible and the Hymns of the Early Church as authentic, yet their deductions of the doctrines therein contained are so various and so opposed that without their respective commentaries a very imperfect idea of the religious state of Europe would be obtained, and an outsider describing Christianity from the Bible and Hymn Book alone would give a hopelessly incorrect account of the religions of Europe which yet are all generally called Christian. Hence it is quite likely that a Horus text of the XIIth Dynasty and another of the XVIIIth, though employing exactly similar phrases, would at those periods be accepted and understood in a widely different sense ; and even in the same dynasty precisely similar formulæ of adoration or deprecation would be interpreted in a diametrically opposite manner, according as they were read at Syene in Upper Egypt or at Memphis in the Delta. All these elements of discordance must be accepted as at present insoluble, and therefore too hastily formed analogies or contrarieties, either for or against the divine conception of Christianity, must not be educed from the Myth of Horus.

The CHAIRMAN (C. Brooke, Esq., M.A., F.R.S., V.P.).—I am sure you will unite with me in returning our best thanks to Mr. Cooper for his very able exposition of Egyptian mythology,* and to the Rev. T. M. Gorman for the pleasing manner in which he has read it. It is now open for any present to offer remarks upon the paper.

Rev. Canon TITCOMB.—The suggestive and valuable paper, which has been read, contains so much important matter that we should be wrong in not fairly dealing with the questions which arise out of it. The point of greatest interest will, I think, lie in a discussion as to how far infidelity has a right to say that the theology of the Bible was borrowed from Egypt, instead of being, as we believe, a distinct and independent revelation from heaven. This, at all events, will be the subject to which I shall now address myself.

* *As there are instances of a similarity in the language of some Egyptian records with that of Holy Scripture, a careful inquiry into the cause cannot be unimportant, when there are those who would attribute an Egyptian origin to the statements in the latter.*—ED.

I need not remark that the idolatry of Egypt was universal. It extended from the beetle to the crocodile, and covered almost every other intervening object. There certainly does not appear to be, at first sight, therefore, any probability that a religion like that of the Hebrews, which taught pure Monotheism and abjured idolatry, could have borrowed its sentiments from a source so diverse. If Hebrew theology did not copy the ideas of Egypt in that fundamental particular, it seems impossible, *à priori*, that it should have followed it in other particulars. There is a striking proof of this, I think, in the almost total absence from the Pentateuch of one great doctrine with which all Egyptian ideas were perfectly saturated—I mean the immortality of the soul. No one can read the Pentateuch without being forcibly impressed with the fact that it contains no reference whatever to a future life. All the sanctions given by Moses's law to obedience were of a temporal nature. Every promise and threat was moulded into the shape of temporal rewards and punishments. The immortality of the soul and the sanctions which are derived from that doctrine do not appear at all in the Pentateuch. Bishop Warburton, as many no doubt will remember, published a large work on this subject, called "The Divine Legation of Moses." We naturally ask, then, how it could be that He who made man and gave Moses a divine revelation, should have purposely omitted the doctrine of a future life, especially when the Egyptians were so well acquainted with it? The reply is obvious. It was because the Egyptians had disfigured it and demoralized it by the hideous monstrosities of their Pantheon. It was on that account withheld from the Hebrews until they had been permanently emancipated from Egypt, lest it should tempt them to fall back into those idolatries with which it had been associated in former times. Here, however, is a strange phenomenon: for, while in Egypt, the Hebrews must have been familiar with immortality and a future life of joy or misery, yet, when Moses gave them God's Law, it found no place in the revelation! I ask, does that look as if Moses had borrowed his theology from the Egyptians? On the contrary, does it not rather indicate a settled design to separate as far as possible from it?

In the next place, let me call your attention to a radical distinction which exists between the Scripture doctrine of a Redeemer from evil and this Egyptian Myth of Horus. No one can have carefully studied Mr. Cooper's paper without feeling that, in some points, it does exhibit certain analogies between Horus and Christ. These, however, are just such as would naturally arise from the prolonged intermixture of truth and error in the transmitted recollections of primeval doctrine. At all events, the variation is as great as the analogy. Let me cite only one particular. You will find the Bible everywhere representing the Redeemer of men as a Being who was *to come*. In the Egyptian myth of Horus it is not so. This myth uniformly represents Horus as having trodden down the great Typhon and destroyed the evil spirit, and avenged his father Osiris before the creation of man. There is, therefore, so far, nothing of a parallel between them. Among the Egyptians

there was no such thing as any idea of Horus coming upon earth in order to rescue the righteous from destruction ; whereas, this is the very cornerstone both of the Old and New Testament teaching. In the Bible, Messiah is always the coming One, ὁ ἐρχόμενος. The Church is taught to wait and watch, in the spirit of patient hope, for a great work of redemption which He is hereafter to accomplish ; but in the Horus myth there is nothing of this kind. Hence, it cannot be said that in this particular Moses, or the sacred writers, drew their inspiration from Egypt.

I come now to the Egyptian doctrine of Divine Judgment ; which, notwithstanding that it presents certain analogies with Scripture (as written by its later authors), is nevertheless based on a totally distinct foundation. For Egyptian mythology places Horus in the Judgment Hall of Osiris, in the depths of an unseen world, immediately after death, and not judging the body but the soul—whereas, from Daniel to Revelation, the Scripture doctrine of judgment is connected with earth, and not Hades, and with the body as much as the soul ; and not after death, but at the "end of time." Now is not that a radical and fundamental distinction which deserves a place in all honest criticism upon this subject ?

Yet, after all said and done, I can well imagine certain minds still staggered by the strange coincidences which are presented in this paper, between the Horus myth and the teaching of the Word of God concerning Christ. When infidelity, therefore, describes the latter as a mere plagiarism from the former, with variations of its own in order to hide its true source, we must not only show (as I have briefly endeavoured to do) the fundamental originality of the Hebrew theology, but the reasons which exist for our antecedently expecting to find similarities between it and the primitive faiths of the ancient world. In adopting this course I am aware that I assume the truth of Scripture ; my argument being, that there is everything within the sacred writings to account for whatever amount of truth we may find in the Egyptian or Chaldean religions. The fact is that, in looking over the primeval races of mankind, we see the remnants of revealed knowledge through the chinks of antiquity. Divine light streamed through those chinks from the very beginning—a light which, though dimmed and darkened by subsequent ignorance and superstition, was still clear enough to exhibit certain survivals of original truth. This was the case with other people beside the Egyptians, as may be seen by the early history of Scripture itself—people who, though not of the Abrahamic family, were yet in possession of much divine knowledge, which they derived through oral traditions. Melchisedech and Balaam, for example, were not of the chosen people, and Job was no less distinct. Yet these three persons, notwithstanding they were separated from the covenant given to Abraham, enjoyed some knowledge of the true God. Now these men are but types and representatives of others, who, within every variety of shade, must have retained fragments of an earlier illumination. Why not, therefore, the people in Egypt ? Why should there not have been a residuum of remembered truth in Egypt, as well as in Midian ? If

Melchisedech, Balaam, and Job exhibited this, why should not a remnant of truth (though in a disfigured and debased form) be found also in the Egyptian creed? * So far from being an argument against the Bible, it is all in its favour; for, by the promised victory of a Redeemer over the Serpent, or spirit of evil, as delivered in Gen. iii. 15, the primeval races of mankind would be sure to hand down traditional ideas of a conquest of some personal deliverer over the powers of darkness. Thus the foundations of truth in this Horus myth are sufficiently accounted for by the Word of God itself; and, therefore, all arguments raised by infidelity against the Bible, based upon the analogies presented in this paper, are useless.

Why should we be surprised, for example, at the grandeur of the titles which the Egyptians ascribed to Horus, and at their striking similarity to those which belong to Christ in our own theology? These affinities are found not only in Egypt, but in Chaldea and ancient Hindustan also. In Hindoo theology, do we not find Brahma addressed by the grandest titles, and always the most sublime and pure in proportion as they are most ancient? Why, then, should we be surprised that Horus was called "Son of the eternal Father"? Is it any grander than might have been deduced from the early revelations of God to man; such as those in the book of Job, for instance, which were as much originated outside the family of Abraham as if they had come from Egypt itself? In that most ancient and wonderful book—probably older even than the book of Genesis—do we not read of the same great relics of truth which are found in this Horus myth, and which seem to come straight from the history of the Fall and the promised Redemption? I refer to the doctrine of an avenging and justifying Redeemer, and to the belief in a perpetual conflict of evil spirits against good men. Why, then, should we marvel, if either Assyrian tablets, lately discovered, or the Horus myth as sketched in this paper, should exhibit, under different forms, various representations of these old beliefs?

I trust these remarks (which have been, I fear, rather too long) will, at all events, prove that we are not afraid to meet the attacks of infidelity, and that we know how to defend the heritage of our faith, with all the force which belongs to earnest zeal and sanctified intellect. (Cheers.)

Professor SEAGER (Professor of Hebrew, &c.).—Sir,—I think it may fairly be assumed, that when attention is called to points of likeness, or apparent likeness, between heathen mythology and the Bible, no more is of necessity meant than that some portion of that primeval light which for us has been embodied in Scripture, has also, whether by tradition or otherwise, and whether in a substantially correct or in a more or less altered form, found its way into the mythology in question. I quite agree with the preceding speaker

* Canon Titcomb has since suggested that it is possible Melchisedech may have been the head of a dynasty of so-called Shepherd Kings from Canaan, whose religion may have been corrupted, and yet have left traces of its grand original. This would account for the phenomenon, and might be worked out, if one had time and the British Museum at one's disposal.

(Canon Titcomb) that to collect and classify such resemblances, and to present them in the form in which they will be best understood, is a very useful work. And such, in the case of a highly important myth, is the object and result of Mr. Cooper's paper. In the remarks, however, which that paper has suggested, reference has been made to an apparent difficulty, which in any sufficiently extensive comparison of mythology with Scripture comes naturally forward—namely, the entire absence from the Pentateuch of any mention of the Resurrection. But the fact is, to have spoken openly of the Resurrection would have been foreign to the whole plan and purpose of that Divine work; the office of which, as the formal expression and incorporation of The Law and the Representative of the Old Testament in general, was not to teach in plain words a system of theology, but allegorically to typify that, as yet far distant, gospel light, for which, by its discipline also, it was already preparing the way. In the New Testament, and by St. Paul especially, we are taught that the Pentateuchal narratives, whatever other meanings or uses they may have, were also allegories, and as such foreshadowed gospel truth. And the more we both realize this fact and search for its causes, the more we shall see that any direct revelation with regard to the Resurrection would not merely have involved the confusion of mixing together the type and the antitype, but would also have been, to say the least, an exception to the general principle on which, as regarded the higher mysteries of religion, it had pleased the Almighty to act—that, namely, of deferring till the due time should be come, their fuller and more open development: a development which then, and not till then, could be made both as a whole and in a manner more worthy of the infinite mercy and love therein to be brought to light. The more remarkable the reticence, the more certainly it had its reasons and objects; and if one such object was the avoiding of that confusion or disturbance of which I have already spoken, this, as we may reasonably conclude, was not the only one. For the general principle which has just been noticed, and to which, more than to any other cause, the very use of allegorical instead of direct teaching may most naturally be referred,—this general principle itself is unquestionably a far more important reason for the reticence in question.

And because this principle is so true, while yet Christian translators and expositors, living themselves in the days of the antitype, have always been in danger of more or less losing sight both of it and of the types themselves, and so of regarding as directly, what was meant to be only indirectly, evangelical—for these reasons—if we wish to be correct, not merely as regards theology, but also as regards the history of theology,—we shall do well to examine, if not suspiciously, at least carefully, all such renderings and expositions of the Old Testament as seem to present with more than usual directness the special truths of the Gospel. And this the more, because, besides the desirableness for its own sake of all attainable accuracy in the rendering and interpreting of the Word of God, all error in the direction here spoken of lays us open to the charge which, if we ourselves give cause, we cannot but expect that

adversaries will make against us, of being misled by our theological proclivities into unnatural expositions or renderings; and this, too, with the further disadvantage, that the more the meaning of a passage is forced, the greater the danger that the passage itself will seem out of keeping with the context.

But if it did not enter into the design of the Pentateuch to speak openly of the Resurrection, it by no means follows that the chosen people were unacquainted with the doctrine of the immortality of the soul. Whatever of truth tradition had preserved, or reason, with the Divine assistance, was able thence or otherwise to develop, if attainable by the world in general, was doubtless, so far as was seen to be good, within their reach also.

Far indeed was the privilege of possessing, with and in the Divine Law, the types and promises of that as yet veiled Gospel which in the end was to enlighten the world;—far indeed was this privilege from destroying or diminishing any other useful knowledge which they either already had or were able to acquire. Only by blindness to the fact that in the letter was contained something beyond the letter, and only in proportion as this blindness was perversely adopted as a principle, did that letter, in itself a bright type of life, become to those who so perverted it, *the letter that kills*.

Reference, however, has been made to those alleged intimations of the doctrine of the Holy Trinity which are said to be contained in the plural designations and forms which in the Hebrew Bible are applied to the Deity. As examples we may take the plural noun *Elohim*, which is the ordinary expression for GOD, and the verb *nàghasék*, let US make, in the first chapter of Genesis. For myself, I quite hold that such designations and forms may fairly be regarded as intimations of the kind alleged; but only as *veiled* intimations; in accordance both with the general principle of which I have spoken, and with the fact that while they undoubtedly admit of this deeper interpretation, they nevertheless do not of themselves force any one to adopt it; being capable, also, of being understood as *plurals of excellence or honour*, such as are, among ourselves, *You* for *Thou*, and *We* as used by kings and other great men.*

One, however, of the points of likeness which were brought forward in Mr. Cooper's paper was that of the judgment after death; and with reference to this point attention has been called to an alleged difference between the Egyptian and our own notion of the judgment in question. But it is important not to lose sight of the fact that, by a very large proportion of Christians, besides the general and declaratory judgment at the end of the world, there is held to be also a particular judgment for each individual, immediately after death. And if this fact is borne in mind, the difference will not be found so great.

(* In colloquial Hindustani the use of *ham*, we, in the place of *maing*, I, is so general that if you wish to make sure of its being understood as a real plural, you must add *log*, people: compare in Flemish (in which language the old *du*, thou, has ceased to exist),—compare the similar compound *gy-lieden*, you-people.—Prof. S.)

In conclusion, we must remember that in heathen mythology such truth as it contains consists, as I have already presupposed, not of tradition only, but also of the developments of traditional or other knowledge. And while, in the case of Revelation, all development, as regarded both its nature and the rate of its progress, kept always the end in view, those developments which took place among the heathen,—and even among the chosen people, in so far as they were left to themselves,—went forward both at the rate and in the manner which the minds and the surroundings of their authors suggested; and hence, if the aim, in itself considered, was laudable, the results, of necessity, were of a very mixed character. The study, however, of the process which was thus, from age to age, in different races and under different circumstances, being carried on, is of course highly instructive; and accordingly, as an important contribution to this study, we cannot but be greatly obliged by the very valuable paper with which Mr. Cooper has supplied us this evening.

Rev. J. J. COXHEAD.—We should be very cautious when advancing theories, that the facts upon which we ground them are true and authentic. This paper advances a theory, according to which we are to explain the existence of those remarkable coincidences between the character and position of Horus and the acts attributed to him, and certain doctrines in our own belief. The point we have to determine is, whether Egyptians held these beliefs from some primeval revelation. But before we go into this, we should consider the nature of the facts with which we deal. These are in the hands of persons who have a special knowledge of the subject, and the interpretation of Egyptian inscriptions and writings rests with a very few persons; and it seems to me that, at the present stage of our knowledge, we should be very rash if we accepted all the conclusions and interpretations which they offer us. We have heard many most remarkable coincidences between what is said about Horus, and the relations between him and his father; but before we can believe that they are to be interpreted in the same way as we speak of Christ as Light of lights, Lord of lords, the Son of the Father, and so on, we must have a more satisfactory faith in the Egyptologists than we have at present.* There are, no doubt, in the Greek myths, also, very remarkable coincidences between what is attributed to our Saviour and what is said of certain heroes in Greek mythology. For instance, the labours of Hercules bear remarkable points of comparison with the works of Christ; remarkable stories are told of the doings of Hercules; and it might be said that those stories must result from some revelation given to the Greeks. Prometheus stole fire from the gods, and came to earth as the friend of man, and was exposed to the greatest tortures; and many have supposed that there is here a certain correspondence with the work of Christ, by reason of His sufferings for the sake of man, and on account of the knowledge that He brought to the human race. We should, however, be

* In some cases interpolations have been discovered to have been made in Egyptian records; and in many cases the hieroglyphics have been explained to have very opposite significations.—ED.

very rash if we jumped to the conclusion that those things were the result of revelation. So also with regard to this Horus myth having any reference to Christ, or that Horus was in any way the representative in the primeval ages of what Christ was to be in the ages to come, his relations to Osiris and Isis were totally different from what we read about Christ. We are unable to account for many Christian myths: for the acts attributed to the Virgin, for instance, by a great portion of the human race, and the character attributed to her by many men of the greatest learning in the Roman Catholic Church. The divine attributes given to her, have grown around her existence in the form of a faith, and that faith is held at the present moment by a large number of Christians. The mythopæic faculty is ever at work: if the translations of Egyptian papyri are absolutely correct, the coincidences between Horus and Christ are remarkable; but they may admit of another explanation than the supposition that the acts attributed to him are a kind of prophecy of Christ.

A MEMBER.—I see towards the end of the first paragraph of the paper the following passage:—"Place the period of Abraham where you may, that of the XIIth Egyptian Dynasty must precede it; the arrival of Jacob and his family cannot have been earlier than the XVIIth, and the expulsion of the Exodus than the XIXth Dynasties." It would be interesting to know upon what facts that statement is advanced. If you refer to Cardinal Wiseman's sixth lecture on the Connexion between Science and Revealed Religion, you will find that there is plenty of reason for the adoption of a very different opinion. It seems to me that the duration of these myths has been very greatly exaggerated, and that very probably here is an instance in which history has been antedated by 6,000 or 7,000 years.

MR. COOPER.—With respect to what Canon Titcomb has said about Egyptian mythology placing Horus in the Judgment Hall of Osiris, not judging the body but the soul, I would remark that the mystical texts do not entirely agree with the Ritual as to the details of the resurrection (see Appendix). The last speaker doubted the antiquity of the Horus myth and of the inscribed monuments of Egypt and Assyria. This is a question that is very easily settled. The very oldest and earliest monuments of Egyptian art have references to the Horus myth upon them. It therefore becomes a question of the age to which the oldest monuments belong. These monuments are the two Pyramids (the great Pyramid has, it is true, no inscription; but the name of Cheops, found roughly painted on one of the inside chambers, perfectly agrees with the same cartouche which is found on a gold ring now in the Abbot collection, where the god Anubis is represented as venerated by Cheops. As for the great Sphinx, it is a well-known emblem of the god Horus as Ra Har Makhû (or the sun on the horizon), the great Sphinx, the tombs adjacent, and the statues of King Chephren, and the monuments of Mycerinus (Menkera) and Sent, which range from the IIIrd to the VIth Dynasties. It does not matter to within a few hundred years what time you put these dynasties backwards or forwards. According to Dr. Birch and the consensus of Egyptologists, the very lowest

period to which the reign of Menes can be assigned is 5895 B.C., 3555 * before Neotanebo (Birch, *Rede Lecture*, 1876, p. 16). But there is an immense length of time between them and the conterminous races of the Semite nations, the people of Assyria, and the people of Palestine. There was, prior to all authentic history, a general influx of Caucasians over the countries of Europe, Asia, and Africa. These intruders came into Africa as to a land of plenty, bringing with them a high civilization, which they engrafted on to a civilization, already existing, of an order nearly as high as their own, and at that period those monuments existed. They found them in existence. As to the translation of the Egyptian and Assyrian texts; ever since Sir George Cornwall Lewis made some amusing remarks about them, there has been more or less scepticism in reference to them and the theories of their translators. If we had only one particular text, and only one lost language to discover, it might be hazardous to place entire reliance on the work of any one student. But, fortunately, we have Egyptian bi-lingual texts containing both Egyptian and Assyrian phrases, very brief in form, but long enough to show that the phonetic names in the one language were the same as the meaning in the other. We discover the value of Egyptian sounds by comparing them with the Greek translations of the stèle of Rosetta and Canopus; and in like manner we ascertain the accuracy of an Assyrian translation by comparing it with Phœnician names and Phœnician inscriptions on the dockets upon the tablets and seals themselves. We have plenty of tablets relating to the sale of slaves and the transfer of property in Assyrian, which give the same particulars in Phœnician on the edge, and we can see when they correspond. In the same way we compare Assyrian and Egyptian inscriptions on monuments, such as the vase of Xerxes, and the cuneiform inscriptions of Darius at the Cossier Road and on the site of the old Suez Canal (*Records of the Past*, ix. 81), and on the Greco-Egyptian papyri. The proofs we get are quite sufficient to establish what we want to know beyond the possibility of doubt. There may be points of divergence sometimes, but there is a general consent of agreement; and this being so, we must accept the explanations given by scholars who have given their time to the elucidation of those monuments. As to the legends of 'Εραελης, they are, beside an archaic myth, exceedingly late in Grecian history. When you talk of Greek or Roman history, and compare its records with the Assyrian or Egyptian annals, the lapse of time is so great that it reminds one of the words of Horace Smith in his well-known address to a mummy in Belzoni's exhibition—

“Antiquity appears to have begun
Long after thy primeval race was run.”

* “Sycellus reports Manetho as claiming for the Monarchy no longer actual duration than 3555 years before the conquest of Alexander. Even this view, however, seems to be extravagant” (Rawlinson's *Herodotus*, vol. ii. p. 2, last edition). Dr. Birch, in his address on the progress of Biblical archaeology (1871), says: “Turning to Assyria and other rivals of Egypt in the most remote times, Babylonia, the cradle of Semetic civilization, stands prominent, as highly civilized and densely populated when Egypt was still in its youthful prime.”—Ed.

Homer and Herodotus were quite children in comparison to this "hoar antiquity," which cannot be less than 4000 years before Christ. With regard to the 'Ερακλης myth, nothing would be easier to prove than that the Greeks, after their contact with the Assyrians, borrowed it from the Assyrians, and probably the Assyrians themselves borrowed it from a still antecedent civilization; and recent research has shown us that the Phœbus of the classics is derived from the Reseph Mikal of the Syrians, as in later times the Egyptian Horus was equalled with the Apollo of the Greeks. But as to that other myth of the Greeks, the story of Prometheus and the theft of fire, it has recently been established by Mr. Smith,* that the Assyrians had a story relating to the god Zu, who was by the Babylonians regarded as a kind of regenerating deity, like the Egyptian Amen-Khem, and was driven out of heaven for the offence of stealing the sacred fire, and transformed into a bird or eel, which seems to bear some minute similarity to the punishment of Prometheus, who was preyed upon by a vulture; while the studies of Max Müller and Cox have proved that all these Promethean myths arose from the deification of the Pramantha or fire-stick of the primitive Aryans, from which indeed the name of the demigod has been derived. We cannot push these points further; and even if we could do so, it would not be wise, because teachers of different religions and philosophers of different minds, treat myths from different standpoints, and what to one man is a corroboration, to another is a refutation, whilst to others again it is a matter of no consequence at all. I had hoped that my paper would have been considerably vivisectioned to-night. I am sorry to say that it has not been treated in that way to the extent I should have wished. I have only brought before you, after all, one section of the Horus myth, for I have purposely avoided the subject of the legend of the Virgin and child, Isis and Horus, because I feel that at present we are not in a position to analogize it. Quite one-half of the texts by which I might illustrate and fortify my paper have been omitted. But, if I had brought them all forward, they would not have done much more than I have done already, for they would be simply corroborations. The Egyptians seem to have considered every deity as maintaining an intimate relationship each with the other. They were all Fathers, Sons, Mothers, Sisters, and so forth. They were all eternal in their essence, interchangeable in their attributes, and confused and indistinct in the phrases employed in the prayers and petitions addressed to them. In later times certain deities came more prominently forward, as the influence of the cults of other nations induced the Egyptians to seek to conform their own mythology to theirs. In the early ages Osiris was the principal deity; then Horus. About the XIth Dynasty, Anubis became the principal. After the XVIth Dynasty, Amen Ra came prominently forward, and then Set. Again, in the XIIth Dynasty, Kneph Ra, of Nubia, became a supreme deity. And so those changes went on from time to time. In the Litany of

* See *Chaldean Genesis*.

Amen Ra, in the XIXth Dynasty, everything is ascribed to Ra, from whom everything proceeds,* to whom everything shall come, as to father, mother, brother, sister, creator, destroyer of all, who is in himself infinitely greater, and infinite nothing. One point must not be lost sight of, and that is, that almost all these religious doctrines are to be found, as it were, in two parts—one at the close of the XIIth Dynasty, when all the religious books were collected together and edited, and another in the XVIIIth and XIXth Dynasties, when all the same important books were more or less re-edited and annotated, and possibly explained by means of new rubrics, which embodied the ideas of the Syrian and Asiatic nations who had been brought into immediate contact with Egyptian theology by the Asiatic conquests of Thothmes III., or Men-Kheper-Ra, and Rameses II.† and III., the original Hero of the glorious Sesostris of Greco-Egyptian tradition.

The Meeting was then adjourned.

MR. W. R. COOPER SENDS THE FOLLOWING ADDITIONAL REPLY :—

Grateful for the discussion which my paper has produced, and the more grateful because I cannot agree with much that has been said on either side of the subject,—I now beg leave to present in a very brief form what I consider to be the true solution of the problem which you have done me the honour of listening to.

1. The idea of a personal deity, who assumed a human form for the accomplishment of the destruction of a personal evil being, was unquestionless one of the very earliest dogmas of the Egyptian faith, and was the direct result of a primitive revelation to some member of the pre-patriarchal church, by whose descendants Egypt was first colonized.

2. That this revelation of a semi-human deity in his connection with mankind was far more clearly made known to the early church than it was subsequently to the Jewish nation, after their residence in Egypt.

3. That the reason of this reticence was, that the Egyptian clergy had so far overlaid the dogma of a personal deity with a variety of fanciful and dangerous theories, that it would have been impossible for the Jewish Church to have differentiated between the Egyptian Horus and the predicted Messiah, if the office of our Lord had been at that time strongly dwelt upon.

4. That the original dogma of the Horus myth was that of a Divine antagonist against the evil being, as an adversary of the Supreme Being ; to whom, however, the Evil Being was infinitely inferior, and that this contest of the powers of Good and Evil had no necessary connection with mankind.

* See *The Myth of Ra* and the texts in *Records of the Past*, vol. viii. pp. 103 and 137 *et seq.*

† M. Bonomi mentions that the Egyptian obelisk at S. Giov. in Laterano (Rome) contains hieroglyphics of Thothmes III. and IV. and Rameses II., showing the same skilfully executed alterations that were made in all Egyptian monuments, in consequence of changes in the religious opinions of the ancient Egyptians in the interval between Thothmes III. and Rameses II.—Ed.

5. That the identification of the interests of mankind, as worshippers of the Supreme Being, with those of Horus as the avenger of the eternal laws of right, was a subsequent development of the doctrine. (See Appendix.)

6. That this led on by gradual steps to the vicarious substitution, or rather imputation, of the acts of Horus to the persons of the servants of his father, and that thus Horus became the deliverer both of gods and men.

7. That the idea of Redemption from spiritual sin was a still later development of the Horus myth, growing out of the recognition of moral evil, having a direct relation, as to its original physical evil; and hence the deliverer from the one was by consequence a deliverer from the other.

8. That the idea of imputed righteousness, in the Christian sense, was a still further development; and this may have arisen from some intercourse, of which we have at present no record, between the inspired writers of the early prophetic books and the more philosophical portion of the Egyptian clergy.

9. That as the Horus myth came into contact with the myths of other religions, it gradually assumed another character,—a character which led not to the alteration of any of its ancient formulæ, but to the application of them in a different manner, and their interpretation in a more spiritual sense.

10. That the early Christian Fathers, in perfect good faith, used similes and metaphors taken from the Horus myth to explain to their Egyptian converts the truths of the New Faith, and, anxious to increase the points of contact between Egyptianism and Christianity, were not sufficiently exact in their definitions, and thus led the way to the introduction of subsequent errors.

11. That, similarly also, the Alexandrian Jews philosophized a connection between the Egyptian Horus and their own divine Memra, and were the more assiduous to do so because of the efforts made by Ptolemy Soter II. to identify their own religion with that of the old mythology.

12. That from a fusion of these two schools of thought arose, on the one hand, the errors of the Gnostic heretics, the Ophitæ, Docetæ, and their analogues; and on the other the mystical teachers of the Shepherd of Hermas, the book of Enoch, and probably that of the book of Zohar; but of this last work I can only speak from quotations.

13. That, moreover, the texts of the Horus myth and the *Ritual of the Dead* are the oldest religious works extant of which we have indisputably the actual texts, while, on the other hand, we have no copies of any of the Christian or Hebrew, or even pseudographical, scriptures, of any *antiquity whatever* to compare them with, and consequently are at a positive disadvantage as to ascertaining the actual belief contained in the formulæ of the one and the *ipsissima verba* of the other.

14. That bearing all these facts in mind, we shall be able the better to account for the subtleties of the Christian Fathers, &c., and to value more dearly, and to defend more ably, separated alike from the endless subtleties and the oppositions of false science, the truth as it is in Christ Jesus, who is over all, God blessed for evermore. Amen.

REMARKS ON MR. COOPER'S PAPER.

 THE REV. PROF. CHURCHILL BABINGTON.

In a Letter to the Author.

Sharpe, *Egypt. Mythol.*, p. 108. The reading must be, I think, + *περρον αποστολου*. The mark below the *v* in *Περρον* is certainly not a *c*: it is hard to say what it is; perhaps a + mutilated, or a *τ* (*r*).

Fig. 1. The first lamp, if from a Christian locality, is probably Christian, but about the second I have more doubt. A Christian locality would alone raise a probability that it is Christian.

With the strange and not yet quite satisfactorily explained scrawl about Alexamenos should be compared a Christian medal (*circa temp. Honorii*) described by Cavedoris in the *Rev. Num.* for 1857, of which I send a tracing, which I will ask you kindly to return, where an ass and her colt are made in some strange way to symbolize Jesus Christ. Alexander's image (on the obverse) was a known magical charm.

Fig. 4. The gem named is one, I suppose, in the British Museum. I omitted it from "Gems" in Smith and Cheetham's *Dictionary of Christian Antiquities*, because I could not feel sure that it was Christian. The figure can hardly be Jesus Christ himself, holding His own self symbolized; but I would not be too sure. The nimbus does not prove that it is Christian (see Martigny). I once fancied that it might be a saint, holding fast by Christ, and "going on" the *crocodile* instead of the "lion and adder"; but I do not now feel any confidence about that.

Fig. 5, second gem, with this compare Matter, pl. 1, E. But I do not see any sure mark of Christianity in either gem. I am very doubtful about the Christianity of some of your other gems.

 THE REV. CANON F. C. COOK,* M.A.

I have read the essay with much interest. Mr. Cooper has read carefully and used skilfully the latest works of high authority in all questions of pure Egyptology. I ought not to criticise his work without careful inquiry, such as I cannot now bestow. I will, however, state very briefly my own opinion as to his general statements. In the first place, I hold it to be a fact, settled on the surest evidence, that the oldest Egyptian inscriptions bear strongest witness to a primeval belief in the unity of

* Editor of *The Speaker's Commentary*.

God, and the absolute dependence of all creation on His will. One of the most instructive documents is the text of the XVIIth chapter of the Egyptian Ritual, published by Lepsius, in the *Aelteste Texte*, &c. It shows that at a very early age, far before the Mosaic period, interpretations were already common, each obscuring and corrupting the original text, which was purely monotheistic. Comparing the text, as it stands in that work, with all later texts, *e.g.* De Rougé's, and Lepsius in the *Todtenbuch*, it becomes self-evident that the later the text the wider is the departure from the original truth, the wilder and grosser are the superstitions engrafted upon it. For my own part, I wish very much that the believers in the Bible record would confine themselves, for the present at least, to the establishment of this fundamental truth. You are aware that Egyptologists of high reputation shrink from the admission which contravenes the dominant notion of evolution. I do not like to enter on the further question touching the identity of the Horus myth with an original revelation. It would require more time, and far more learning and ability than I pretend to, to go through the literature, and to discriminate between what is really ancient and what is partly derived from, or influenced by, speculations of the Alexandrian school, or the predecessors of that school in Egypt. I believe, indeed, that, together with the primeval revelation of God to man, intimations, or rather germinal truths, were given, which were to receive their explanation and development after the Incarnation. Delitzsch, in his *Apologetik*, takes the doctrine of the Trinity as lying at the basis of all known religions. I do not, however, like the course indicated in the lecture. It seems to me, not indeed to go too far, but to move in a direction which few will follow with real profit, which, as some writers have already shown, may issue in a temporary but very serious embarrassment to Christian inquirers. I remember, in Miss Martineau's *Egyptian Travels*, an attempt, not original, but skilfully made, to represent Christian doctrines touching the Saviour as embodiments of ancient myths underlying the Egyptian system. If I could see my way to go into this subject, I would have asked for more time. As it is I send this short, very unsatisfactory answer.

MONSIEUR ALEXANDRE LOMBARD.

A Letter to the Editor.

Vous avez bien voulu me demander de mettre par écrit les sujets sur lesquels j'ai eu le plaisir de m'entretenir avec vous. Malgré mon insuffisance, je vais essayer de le faire, et pour les deux objets suivants.

- 1°. Les traditions relatives au principe du mal figuré par le serpent.
- 2°. L'école des prophètes de Chaldée.

Quant au premier point, n'est-il pas frappant de trouver dans les divers mythes de l'antiquité le principe du mal toujours caractérisé par le serpent ? Tandis que les uns, pour se rendre favorable l'ennemi de l'humanité, lui

vouaient le culte qui a pris le nom *d'ophisme*, les autres admettaient un principe contraire et régénérateur auquel devait appartenir la victoire finale. Je me borne à mentionner ici quelques mythes bien connus qui rappellent d'une manière frappante et la tradition génésiaque relative au serpent séducteur, et la promesse d'un libérateur faite après la chute.

Le premier est le Crishna des antiques Vedas écrasant de son pied la tête du serpent.

Le second est le dieu égyptien Horus combattant le mauvais génie représenté par le serpent et lui perçant la tête d'une lance.

Le troisième est une mythe persan ; c'est le roi Feridoun, le héros bien-faisant, qui combat et surmonte l'esprit du mal personnifié dans Zohak, mot qui désigne en même temps le serpent.*

Je dois mentionner enfin le serpent Python des Grecs tué par le grand dieu Apollon.

Mais ce n'est pas dans l'ancien monde seulement que cette idée se retrouve. L'Amérique nous fournit quelques exemples de la même tradition.

Humboldt nous apprend que dans la religion des anciens Mexicains, le serpent personnifie aussi le génie du mal et qu'il est écrasé par le grand Esprit Teolt.

D'autre part, une pensée analogue, quoique revêtant une autre forme, s'est traduite dans un tumultus qui se voit sur les bords de l'Ohio ; c'est encore l'esprit du mal envahissant le monde, mais dans ce dernier cas, il remporte la victoire, en d'autres termes c'est au sommet d'un vaste tertre la figure modelée d'un serpent gigantesque, et ce serpent avale un œuf qui apparemment symbolise la terre.

Peut-être, en cherchant bien, trouverait-on, en Scandinavie et ailleurs d'autres faits semblables ; mais ce qui précède suffit pour établir que chez les peuples les plus anciens existe la tradition d'un être malfaisant opposé à Dieu, et que cet être, conformément à la donnée génésiaque, est le serpent. Mais en même temps, il est consolant de voir que généralement ce mythe est accompagné de l'idée d'une victoire finale de l'être bienfaisant sur l'esprit malin et de la venue d'un libérateur.

Ceci me rappelle un autre mythe indou que j'ai lu quelque part et dans lequel j'ai cru trouver la même idée. Je m'aventure à le citer ici de mémoire, et sous toute réserve, quant à son exacte interprétation. C'est, je crois, dans les montagnes de l'Himalaya que se passe la scène.

De sombres nuages couvrent et obscurcissent le ciel ; la foudre sillonne l'horizon : c'est le dieu Maruts, le dieu des tempêtes qui vient exercer son empire sur la terre. Tout-à-coup apparaît un autre dieu son ennemi. C'est Indra. De son bras armé d'un marteau symbolique en forme de croix, il frappe Maruts et sa cohorte de nuages. La tempête cesse, le calme se rétablit et le ciel reparait dans toute sa pureté. N'est-ce pas là une image frappante

* Serait-le dans un article de M. E. Burnouf, A.L.—M. Lombard is just now separated from his books.—Ed.)

du message de paix qui devait être apporté par le Sauveur des hommes, et que n'y aurait-il pas à dire de cette croix qui apparaît dans les traditions de l'antiquité, chez les Egyptiens, chez les disciples de Bouddha et de Manès, chez les druides et bien d'autres encore, comme le symbole du salut du monde, le "signe de vie," "l'arbre de vie, de la régénération et de la connaissance."

Mon intention n'est pas d'insister sur ce sujet qui dépasserait les limites d'une simple lettre, et qui, s'il n'était étudié avec précaution, risquerait d'égarer dans les sentiers dangereux du formalisme romain.

J'aime mieux revenir à cette idée d'une révélation noachide par laquelle la rédemption de l'humanité était annoncée, révélation dont les prêtres de la haute antiquité avaient connaissance, et dont ils arboraient les symboles sous des formes diverses. Ces prêtres, à l'ordre desquels appartenait Balaam, et qui se perpétuèrent en Orient jusqu'à la venue du Seigneur, ainsi que l'indique l'arrivée des mages à Béthléem—étaient formés dans l'une des grandes écoles des bords de l'Euphrate.

C'est le second point dont nous avons parlé, et que je me propose d'aborder dans cette lettre.

Il existait évidemment à Babylone, à Ninive, en Perse et dans les vastes contrées de l'Inde, plusieurs centres d'études théologiques, lesquels, sous des dénominations diverses, étaient autant d'écoles de sages, de mages, *magoi*, ou de prophètes. Elles possédaient certains principes de vérité, mais la tendance à représenter les idées sous un symbole visible les conduisit au culte matériel, et Dieu leur opposa sur la terre prédestinée une autre école où la doctrine révélée pût être maintenue dans toute sa pureté.

Néanmoins, il est probable—et c'est ma conviction—que des germes de vérité ont été propagés dans le monde païen par cette ancienne prétrise, et que le message du vrai Dieu et de la rédemption, quoique sous une forme obliérée, a été transmis aux plus lointaines colonies par le moyen des élèves de ces écoles.

N'est-ce pas une chose frappante, en effet, que de trouver comme nous venons de le constater, jusque dans les contrées les plus lointaines, des vérités évidemment puisées à une source commune ?

Ce qui est non moins remarquable aussi, c'est que ces vérités, ou tout au moins les symboles qui les caractérisaient, se trouvent inscrits sur les nombreux monuments qui nous ont été légués par les temps pré-historiques.

Nous pouvons croire que les besoins de l'homme ont été les mêmes dans tous les temps, et que, pareillement aux colonies anglo-saxonnes qui de nos jours vont peupler le Far-West et l'Océanie, toujours accompagnées de pasteurs et de missionnaires, les lointaines expéditions des Phéniciens ne s'accomplissaient pas sans que les prêtres élevés dans les diverses écoles dont je viens de parler, y prissent part. Ils étaient les interprètes des besoins supérieurs de l'âme et les conservateurs des antiques et saintes traditions. Mais ces prêtres égarés dans les voies d'un symbolisme formaliste ont bientôt dégénéré et

sont devenus les fauteurs des plus grossières superstitions, et les fanatiques artisans d'un culte à la fois sanguinaire et sensuel.

C'est ainsi qu'on peut s'expliquer la similitude des formes de certains monuments apparemment consacrés au culte de Bahal ou du soleil et qui se retrouvent depuis le Liban et la presque île sinaïtique jusqu'aux côtes de l'Afrique ; à Radamès dans le désert du Sahara ; en Sardaigne, aux Baléares ; aux Hébrides ; en Irlande ; en Ecosse. Tous portent à peu près le même cachet, et sur un grand nombre d'entre eux se voit le signe mystique dont il vient d'être question, signe qui, bien qu'on l'ait contesté, est assurément antérieur au christianisme.

N'y a-t-il pas là un fil conducteur pour les études préhistoriques et toute une riche mine d'intéressantes recherches qui aideront à faire comprendre certaines notions conservées à la fois chez les druides et dans l'école d'Alexandrie, et qui peuvent expliquer aussi la rapidité avec laquelle le message de l'apôtre des Gentils fut reçu dans tout l'occident ?

Voilà en quelques traits la pensée que j'ai voulu vous exprimer. Son développement exigerait beaucoup de temps et des connaissances plus précises que les miennes.

Peut-être trouverez-vous quelque exagération dans les conclusions tirées de ces rapprochements ; mais puisque vous avez bien voulu me demander de donner une forme aux quelques paroles que je vous ai dites, je me hasarde à vous soumettre ces lignes. Je ne les ai écrites que pour vous montrer l'intérêt que je porte au genre d'études auxquelles vous vous êtes consacré et ma considération pour le poste que vous occupez dans la société dont je me sens honoré de faire partie.

Recevez, cher Monsieur, mes souvenirs et mes meilleures salutations.

THE REV. W. H. RULE, D.D.*

There can be no doubt that the oldest Egyptian writings contain some vestiges of primeval faith. Egyptians in very remote ages believed in the immortality of man, with reward or punishment in the future state. They believed in the existence of good and evil powers in this life, and were not without a sense of personal responsibility ; for, like other heathens, they had a law written on their hearts, in the absence of any law written elsewhere.

All this notwithstanding, Mr. Cooper certainly goes much too far when he says that the Egyptian and the Christian religions nearly analogize on many points, especially on those relating to the doctrine of human redemption. Before attributing so much to the wisdom of Egypt, it would have been

* Author of *Oriental Records*.

well to have bestowed more studious research on the foundations of our own faith, which might have enabled him to preface his observations with greater accuracy of language, to delineate Christianity more distinctly, and make his comparison more thorough. The doctrine of the Divinity of Christ, for example, he describes as "a special *result* of revelation," whereas it is the very truth revealed. He calls Christ "a *vicarious* Deliverer of mankind," as if He were not the Deliverer himself. He refers to the Nicene Creed as if it were the primary authority, which of course it cannot be, and calls the Athanasian Creed the *Commentary on the Nicene*, which it certainly is not, although both creeds, as I believe, faithfully represent the teaching of Holy Scripture. He would not so loosely have described the "subject" of these creeds as "one which has formed the foundation of a variety of heretical expositions in the first three centuries of our era," which is much like making the doctrine of the Divinity of Christ the foundation of Arianism, a conception as incongruous as that of making the Horus myth a foundation of Christianity.

This looseness of language betrays haste, but it introduces the "hypothesis" on which Mr. Cooper proceeds to "base his argument," that long prior to the time of Abraham the cardinal dogmas of the Church were known to the nations of the world, and that it was reserved to the Father of the Faithful, and his descendants, to hold and to transmit to us the whole of those dogmas in their integrity; but that "even to the Jews themselves the full import of their own articles of faith was not fully known, while isolated doctrines, which were held in common by them and by other nations, were expanded to a degree which the patriarchs never understood, and which in some points anticipated, so far as these expansions arose from the conscious yearnings of the soul after God, the tenets of Christian revelation."

I apprehend that we have not yet any evidence to show that the cardinal doctrines of the Bible—not the Church, for the Church is not the Author of Truth, but the custodian and teacher of the truth entrusted to her—were known to the nations of the world. Certainly the doctrine of redemption is not yet discovered in the records of those nations. What was done by Abraham and his descendants to preserve what they knew we cannot tell, for we only know that Moses and the prophets, being taught of God, delivered to some of the descendants of Abraham what they had not known before. As for the expansions, in whatever direction the isolated doctrines said to have been held by all nations were expanded, I hesitate to accept the proposition that *those expansions*, even though some of them might haply have arisen from conscious yearning of the soul after God, *anticipated the tenets of Christian revelation*.

We hold in our hands the *origines* of Christian doctrine, and bating the little that was not fully revealed before Christ came into the world, we find written in the Old Testament all the doctrine that is the subject of Christian faith. To the Old Testament Scriptures our Lord himself referred the people of His time for the instruction they needed, saying that Moses and the prophet

were they that testified of Him. The inspired Apostles, authors of the New Testament Books, quoted thence continually. Holy men of God, who did not compile traditions, but spake as they were moved by the Holy Ghost, left to the world this imperishable body of truth and wisdom; and to this source, not to the undiscovered yearnings of men's souls after God, we owe the fundamental tenets of Christian Revelation. In these tenets there is no novel truth, but the spirit of Christ and of inspiration gives primal truth the power which now it has, now that the redeeming work of Christ is done. Chaldeans, Egyptians, and Job the Arabian, all before Moses, believed, so far as they were enlightened, in the immortality of man, and so did Abraham; but it was made manifest by the appearing of our Lord Jesus Christ, who abolished death, *and shed light upon life and immortality, φωτισαυτος δε ζων και αθανασιαν*, through the Gospel (2 Tim. i. 10).

Unless I miss the drift of the paper before us, it tends to this conclusion: that all the elements of revealed truth, not only such a primary truth as the existence of a Deity, and such an indelible conviction as a belief in immortality, but all the elements of Christian revelation, were at first imparted to mankind in general. That they fell, as fragments, some to one, and some to another, and were incorporated with all the religions of the world. That the *disiecta membra, undique collata*, are, so far as the process of readjustment has been carried, preserved in the Christian Church, but that this process will be carried further, and after more extended researches and profounder studies, the world will be much enriched. No doubt it will; but the mystery of Christian faith, be it well remembered, came to us by another channel. That mystery was not known to the Egyptian hieroglyphists; *in other ages it was not made known to the sons of men, but from the beginning of the world was hid in God* (Ephes. iii. 5, 9).

But what of the Horus myth? Mr. Cooper regards Horus as a type of Christ, because he is the son of a god, and because of his character as an avenger and a deliverer, and his great benevolence. As for his reputed sonship, I incline to doubt, and think it inconsistent with the earliest form in which we possess the Egyptian mythology. According to the oldest texts of the *Book of the Dead*, as published by Lepsius, Horus is not so much a distinct god as one of three forms of the same divinity. In the Sun, as in a chariot, rides Ra, the Supreme God. Rather, he sails in that glorious disc, as in a barge, over the sea of heaven, in meridian majesty; inferior gods are the rowers. At eventide, he reaches the western bound and enters the under world, where, as the rays of day are quenching, the souls of the departed wait admission, for they arrive there from eve to eve. He was Ra at noon, now he is Osiris, and assumes the government of the whole realm of the departed, where goes on the business of judgment, of justification and rejection; where are the fields of war with malignant demons, and successive regions of enjoyment by the victorious justified, up to the most glorious heaven. With daybreak Osiris emerges from his nocturnal world, in form an infant, but swiftly waxing into robust youth. The solar disc reaches the

eastern sky; the rejuvenated god steps into it, lesser gods attending. They hail him Horus Ra. The men of Thebes call him Amen Ra. He mounts aloft, and while he advances in dazzling majesty until he comes to the West again, he is addressed from hour to hour by various names, written in the Solar Litany, until, at night again, he is Osiris. On other accounts, and in various situations and relations, he has many names and epithets, and even mortals borrow names from him. Horus is one. But how Horus can be son of himself, it is not easy to imagine, yet the transformations of the *Book of the Dead*, and its confusion of gods with men, and the whole maze of Egyptian mythology, seem just as unfathomable. Only by a rare union of industry and imagination could any one devise a resemblance of Horus to Him whom St. John declares to be the only-begotten of the Father, full of Grace and Truth.

Although I cannot regard this great solar God as a type of our Blessed Lord, I am nevertheless ready to believe that the Egyptians might sincerely honour him as an ideal Deliverer or an Avenger. No doubt they worshipped their gods in the sincerity of ignorance. They would be ready, in common with other men, to look for intercessors in heaven, or under the earth. They trusted for salvation, if trust it was, in the mere names of gods, especially Osiris, under which name every Egyptian was supposed to pass at last. And it is notable, as M. Lenormant shows, that the Accads and Chaldees did invoke one very gracious god whose office was to intercede with the other gods for sparing men from curses, or turning away their anger from the supplicants. Such a disposition in the very nature of man to seek help from some superior being, cannot but prepare the way in smitten consciences for the intelligence of One Mediator between God and man. This, however, is very different from any point of contact, or reason of resemblance, between Horus and Christ.

And now I have but a few more words to say. If Horus was to the Egyptians the type of Christ, was that by Divine appointment? Was Horus as much the type of mediation in Egypt as the lamb was type of atonement in Judea? Did it please God in merciful condescension that so it should be? If Mr. Cooper thinks it did, for such an appointment might not be inconceivable, why did no good come of it to Egypt? Why is it not found in their worship?

If the Horus myth represented a primeval revelation, and the fable and the sentiment originated with Him who is the only giver of revelation to mankind, why did He show so little favour to the religion and the gods of Egypt? Why so terribly contend against their gods? And why might He not have raised a Pharaoh to shepherd His people in Egypt, as well as a Cyrus the Persian in Babylon?

But the resemblance elaborated so largely by Mr. Cooper may be made up of no more than casual and forced coincidences, in which case it fades as a shadow. Horus had no being, and the fancied analogy is nothing, and, contrasted with this nullity, is the sure foundation of historic fact in which Christianity is laid.

Turn from Mr. Cooper's hypothesis and his Horus myth to M. Volney's

Ruins of Empires, with his notorious illusion that our Blessed Saviour was an impersonation of the Sun. Bear in mind how utterly different the two men are, but compare the two *ideas* accidentally coincident. Consider his notion of archaic theological texts, and, as he appears to understand his own language, the compilation of the Pentateuch. Then take the problem which he lays before you, and which may be stated thus:—*The traditions of primeval faith, collected from the world, have contributed to make up the Bible.* Hence it would follow that the notion of revelation itself is traditional. Those poets had it who began from Jove. The incarnation of a god is a primitive tradition. The Egyptians had it eminently. Redemption, perhaps also exemplified by some heroic incidents in history, is another; and this, associated with Horus, was wrought out in the New Testament account of Christ. The crucifixion was a visual illusion, as some reputed heretics believed. The problem being solved thus, the grossest infidelity follows, and we hear some men already speaking of Bible legends.

These legends, however, are verified as real history by the confirmatory evidence of archaic monuments.* The mass of evidence is greatly enlarged; the Christian world is abundantly satisfied; and without any sensation of "alarm," which our friend needlessly apprehends, we prosecute the collation of such documents with the text of Holy Scripture, and are content to trust in its Divine authority.

THE REV. B. WREY SAVILE, M.A.

Respecting Mr. Cooper's remarkably able paper on the "Horus Myth," which I have read with much interest, and, I trust, some profit; although I have been investigating the subject of Egyptology at various times for some years, I frankly own that Mr. Cooper's theory of the Horus myth being in any way connected with the Christian's belief in the promised Messiah is something quite new to me; but I cordially agree with him—1. That the subject is deserving of careful study; and, 2. That whatever conclusion may be arrived at by those who investigate the matter, it can cause no more alarm to the believer in a Divine revelation than anything else in the realms of science discovered by the ingenuity of man.

It is a singular fact that a school has recently arisen, headed by the Astronomer Royal of Scotland, who hold that there are many points connected with recent discoveries at the Great Pyramid of Ghizeh, which are capable of a Messianic interpretation. I have not been able to find conclusive evidence of

* It has been with me a matter of great regret that so many of our Egyptologues and Assyriologues appear to set up their discoveries above the Bible, while they are in reality invaluable sources of confirmation to its marvellous historic and prophetic truth. As for the traditions, the precious monuments on which they appear, so far as my studies enable me to judge, demonstrate that as ages advanced they became weaker and more corrupt, men departing further from God.—W. H. R.

the truth of this theory, but, as in the case of the Horus myth, I think it deserving of consideration.

I would wish, before proceeding further, to mention a few points on which I am obliged to dissent from the learned author of this paper: *e.g.*, p. 1, I cannot admit that the so-called "Creed of St. Athanasius" is in anywise a "commentary of the definite language of the Nicene Creed." Neither can I agree with him that "long prior to the time of Abraham the cardinal dogmas of the Church were known to the nations of the world" (p. 2 of Paper); or that "the arrival of Jacob and his family cannot have been earlier than the XVIIIth, and the expulsion of [P at] the Exodus than the XIXth dynasties" (*idem*), or that the Great Pyramid should be described as "the oldest of Egyptian buildings" (p. 3 of Paper).

Reversing the order of these, I would remark that the Pyramid at Saqqarah is said to be older; and the Ashmolean Museum at Oxford contains part of a tomb belonging to the IIInd dynasty, certainly a century older than the Great Pyramid of Ghizeh; and that if tradition, with other evidence beside, is to have any weight, Jacob and his family must have arrived in Egypt during the reign of Apophis, the most distinguished of the Hycsos kings. If Mr. Cooper will refer to Canon Cook's *Excursions*, at the end of Part I. of the first volume of the *Speaker's Commentary*, he will find many reasons for concluding that the Exodus of the Israelites occurred under the XVIIIth, and not under the XIXth dynasty.

His remark, however, respecting "the cardinal dogmas of the Church being known to the nations of the world long prior to the time of Abraham," seems to open the whole question as to the application of the Horus myth to the fundamental doctrine of the Christian religion. Mr. Cooper has adduced many points which appear to show some analogy between the two; but if such be admitted, there is so much dross in the teaching of that extraordinary book, *The Egyptian Ritual*, on which the author almost entirely rests his case, that it leaves the matter very undecided. As far as revelation is concerned, while the antediluvian world must, we gather from Genesis iii. 15, have had some tradition of the promised Deliverer, it is no less certain from Joshua xxiv. 2, that between the dispersion and the time of Abraham, the nations, whether Semitic, Hamitic, or Japhetic, were worshipping idols. And there is ample evidence that the Egyptians of the race of Ham at a very early period were gross idolaters. But it is probable that Mizraim, the son of Ham (Gen. x. 6), the first colonizer of Egypt, and, I believe, the same as the Menes of the Greek historians, and founder of the empire, may have carried to Egypt from the plains of Shinar, together with the first band of emigrants, some tradition of the promised Deliverer.

I do not quite understand to which Horus Mr. Cooper refers in his interesting paper. There appear to have been two of that name, known to the early Egyptians as "the son of the great gods."—1. Horus, or *Her-pa-Chruti*, the ordinary hieroglyphic sign of "child," son of Osiris and Isis, out of which grew the Grecian Harpocrates; 2. Horus *Aroeris*, "the mighty," god of Heliopolis, &c. (see Wilkinson, xvii. 1), the eldest son of Hathor and Isis, bearing

the name also of *Ahi*, "support." This Horus is represented with the flagellum and royal sceptre, sitting on a lotus-flower, which rises out of the water. In Mr. Cooper's paper there seems to be a mixture of both these two; i.e. the Horus myth, as interpreted by him, if I do not mistake his meaning, has some of the characteristics of both, in his description of Horus *Ra-Teti* and *Noti* (p. 4 of Paper).

I cannot, however, reconcile the author's just description of the Egyptian belief of all life emanating from the sun, and the cosmic egg described in the *Ritual* or *Book of the Dead*, from which the Babylonians, Phœnicians, and Grecians, in all probability, gathered their respective cosmogonies, and which seems to be received by some of our "advanced thinkers" in the present day, with any of the "cardinal dogmas of the Church" of either ancient or modern times.

With reference to what is said about Horus and "the cosmic deity Set working in harmony," I believe a great deal may be gathered from this shepherd deity, who, in post-Hycos times, obtained admission into the Egyptian Pantheon. It is the only way in which I can understand a Pharaoh speaking of Joseph's "God" in the way he appears to have done (see Genesis xli. 38). Set or Sutech, the deity of the Hycos, being explained by Dr. Birch as "the one only God, distinct from all other deities." This supports the opinion of Mariette Bey, that the "shepherds" have been greatly misunderstood and maligned by Manetho and others; very much in the same way as the last of the Plantagenets has been by the Tudor chroniclers.

I observe that Mr. Cooper considers that "the present copies of the *Litanies of Horus*, which we possess, are all *very late*," which means, I conclude, from his allusion in the previous sentence to the "inscriptions at Edfu," of Ptolemaic and not Pharaonic times. If this be so, it may serve to explain much of the supposed similarity between the Horus myth and the cardinal dogmas of the Christian faith; as Plato, who flourished between one and two centuries before the first Ptolemy appeared in Egypt, had learnt enough, in all probability, from intercourse with the Hebrew race, to enable him to foretell, in that remarkable description which he has given in his *Republic* (ii. chapters 4 and 5) of the coming "Just One," many things, such as His being "scourged, bound, and crucified," all of which we know were literally accomplished upwards of four centuries after Plato's time, in the person of Christ. In this I think we have a nearer approximation to the cardinal verity of our religion than anything yet discovered relating to the Horus myth.

So again relating to the well-known doctrine of metempsychosis described by Mr. Cooper, and which the Greeks so closely copied from the ancient Egyptians; here we have an essential difference between the doctrine of the two religions: and I observe in a note that Mr. Cooper calls attention to the fact that while Thoth bore the name of *Nahem*, "the Saviour," this title was *never* applied to *Horus*, nor to any one but *Thoth*, and to him only on very rare occasions.

The account, however, of the Egyptian idea respecting a future judgment,

as set forth in chapters xvii. *et seq.* of the *Book of the Dead*, to which Mr. Cooper has so many just allusions in his paper, is most valuable in showing how far in advance of other heathen nations the ancient Egyptians were on that important doctrine of the Christian faith; and it is much to be regretted that those few Egyptian scholars which England as yet possesses, have not more thoroughly investigated this branch, if I may so term it, of the Horus myth; as the whole subject might throw more light upon the possible analogy between the two faiths.

I am unable therefore to see what Mr. Cooper says concerning the "influence of the Horus myth upon Christianity," or that the rightful understanding of it will give us "a deeper insight into the writings of the Alexandrian fathers generally"; inasmuch as the greatest of them, Clement, bishop of that city, while admitting that the Greeks drew many of their philosophical tenets from the Egyptians, and surpassed them in many of their gross idolatries (see his *Exhortation to the Fathers*, ch. ii.), yet exposes their temple worship in such a way as to show that in his opinion they could have no conception of the dogmas of the Christian faith; *e. g.* in his *Pedagogus*, ch. ii., he thus speaks:—"If you enter the penetralia of an Egyptian temple, and the sacrificing priest remove a little of the veil in order to show the god, he will cause a hearty laugh at the object of their worship; for the god whom you have rushed to see will not be found therein, but a *cat*, a *crocodile*, or a *snake*. The god of the Egyptians appears a beast rolling on a purple couch."

Mr. Cooper alludes to a lamp at Denderah (fig. 2), figured in Denon's *Egypte*, in which the principal representation is the usual *crux ansata* of the ancient Egyptians, which was probably known to them at least 2000 B.C.; but I do not quite see how this in any way explains the Horus myth, or is connected with the misapplication of the doctrine of the cross as entertained by multitudes of nominal Christians in the East, especially after the 4th century, when so great an injury was done to the purity of the Christian faith by the admission of the mass of heathen, when Constantine decreed the union of Church and State, and his mother, the Empress Helena, through the craft of a superstitious priesthood, made that wonderful discovery at Jerusalem of the three crosses, resulting in that fabulous legend which has done so much injury to the Christian name, and which is as firmly believed in by many even in this country, and in the middle of the 19th century, as it was in the darkest phase of the Middle Ages.

Nor can I quite agree in the conclusions at which Mr. Cooper appears to have arrived respecting the teaching to be gathered from his very interesting account of various Gnostic gems (see fig. 4 *et seq.*). To mention two cases, he cites an example from King's *Gnostics*, of "the Good Shepherd bearing upon His shoulders the lost lamb," which, "*upon closer inspection*," proves to be "*the double-headed Anubis*,"—one human, the other that of a jackal. What connection had this Anubis, the son of Osiris and Nephthys, who is sometimes called Hermes, and represented as conducting the deceased to the Hall of Truth at the final judgment, with the Saviour of the Christian Faith?

If we regard the earliest known Christian inscription of a human figure bearing a lamb on his shoulders, as found in the cemetery of Marcellinus at Rome, while underneath there is a representation of five Christians seated at a semicircular table, partaking of the Lord's Supper, which may possibly be as old as the 2nd century, *there is no mistake*, as in the case of Anubis cited above, as to the teaching of such inscription. (See Wharton Marriott's very valuable work, *Festiarium Christianum*, plate xvi., for this inscription.)

Again, I do not quite understand what is the lesson which Mr. Cooper means us to learn respecting "the explanation of the rude *sgraffiti* discovered on the walls of the *Coliseum* (? rather *Hadrian's Palace*, I believe) at Rome a few years ago" about Alexamios worshipping his god. The explanation is given of the satire in Tertullian's *Apology*, c. xvi., as Mr. Cooper mentions in a note (last page but two of the paper), and still more fully in his work *Ad Nationes*, c. xiv., where he relates the vile calumny about *Onocoetes*, which ungodly Jews and raging heathen were in the habit of bringing against the early Christians in those days of persecuting edicts. And I think some analogy may be worked out between the ass-headed figures which they falsely accused the Christians of worshipping, and the hieroglyphic symbol of *Set* or *Suteck*, the deity of the Hyesos, who was subsequently, as I have before noticed, introduced into the Egyptian Pantheon, as notably seen in the name of Pharaoh Seti I., the father of Rameses the Great, but I cannot discover any application to the Horus myth.

In speaking thus, I readily confess my own ignorance of the subject, and think we owe a debt of gratitude to Mr. Cooper for the way in which he has brought it before the Victoria Institute. And if I gently express my dissent from his conclusion "that the ideas, and works of art, &c., cannot be well studied without a right comprehension of the nature and influence of the Horus myth," I cordially endorse the continuation of the sentence, "that it becomes every student, or at all events, every expositor of the Book of Books, to examine this myth, and work out its operations for himself."

MR. COOPER'S FURTHER REPLY.

The following are passing notes on the preceding communications:—

CANON COOK has stated that the text of the XVIIth chapter of the Egyptian Ritual, as published by Lepsius, shows that the original text was purely Monotheistic; I would remark that the Religion of Upper Egypt, and especially of Thebes, under the XVIIIth Dynasty was fundamentally Monotheistic.

M. LOMBARD: Of the myths of Horus, Apollo, Krishna, Feridun, Teoltepec, I think all consider only the first two to be pre-Christian.

DR. RULE: in his second paragraph takes me to task for calling Christ a vicarious Deliverer; that the act of deliverance was vicarious was all I meant to imply. Further on he considers the drift of my paper to tend to the conclusion that all the elements of revealed truth were at first imparted to

mankind in general ; I would rather say to one race, by contact with which all other races may have derived their religious ideas. Again he refers to M. Lenormant having shown that the Accads and Chaldees invoked a gracious god, whose office was intercessory ; this was Marduk the son of Hea, his office was more of a physician and protagonist of Tiamut the Abyss than that of a redeemer ; his offices were also assumed by Bel : the Semitic and Turanian ideas of Marduk differed. Further on he says, "Horus had no being" ; surely no, the very essence of Horus was his *Being*, self-existence or personality ; the theories which made him a deified pre-historic monarch came later. With regard to his comparison of my hypothesis with Volney's statements ; it is hardly fair to compare my argument with Volney's philosophical atheism. The French Count assumed his facts ; mine at least are based upon texts and monuments. My own contention is that the interpretation of those texts is the sole question in dispute.

The Rev. B. W. SAVILE : remarks that tradition and other evidence shows that Jacob must have arrived in Egypt during the reign of Apophis, the most distinguished of the Hycsos kings ; this view I also published in an article in *The Church of Eng. Sunday School Magazine* in 1871. With respect to the tomb at the Ashmolean Museum, it is that of a Priest of King Sent, and exhibits "the personal adoration of the monarch as the direct and lineal descendant of the gods, and of the same substance or flesh with them." (Birch, *Egypt*, p. 27.) Further on he says it is probable that Mizraim may have carried to Egypt some tradition of a promised Deliverer, in which I agree with him. He then states that there were two Hori ; now both Hori are really one ; the Aroeris is a later Greco-Egyptian form : Horus is called the child alike of Hathor and of Isis, of Ra and of the spirit Hut. I quite agree with Mr. Savile's next paragraph ; but I really knew personally (in 1873) a *learned mythologist* who would put an egg into an egg-cup on the mantelpiece and then *adore* it as the mysterious mother of all things : the other reference was to the doctrine of the Tyndallites, all life is from the sun. I must confess that my phrase in saying, "the present copies of the *Litanies of Horus* which we possess, are all *very late*," was vague.

On perusing the opinions which my paper has brought forth, I cannot but be painfully impressed with regret that so little controversy took place on the night when it was read, and when I was prepared with materials additionally to substantiate my positions. If these were heterodox, why were they not then refuted ? If, Egyptologically, they were unscientific, why was I not corrected ? Writing as I do now, in permanent exile from London, and myself at the very door of death, it is peculiarly disheartening, after thirty years of orthodoxy, to be in doubt whether a paper written in defence of Christian doctrine, has not in itself afforded a handle to infidel misarguments. Of course, as an Egyptologist, I cannot endure such a felicitous (?) simile (which I understood a critic to apply to my paper) of a pyramid of theory being raised upon a slender inverted apex of fact, but I do nevertheless very sensibly feel the importance of the fears urged by Canon Titcomb, that improper inferences may be drawn from certain statements in the myth of Horus, so, rather

than open a door for heresies which I detest, I would prefer to consider that I have overstated my own positions, and perhaps have read too much of a later Christianity into the Horus myth than the words themselves would have strictly warranted. I do not say that I have done so, but my confidence in certain deductions is so far shaken that I should not be surprised if it were *proved* that I have thus misinterpreted my texts; albeit I must with equal positiveness assert that nothing in the after papers by Canon Cook, M. Lombard, Dr. Rule, and Mr. Savile, has shown this to have been the case. Let it be remembered that those assertions made in my paper, though new to many of the members of the Institute, and others, are not by any means new discoveries; were they such I would have refrained from publishing them. The analogies existed, and had been pointed out by Sharpe and Wilkinson, and by my esteemed master Bonomi, years ago. In France and Germany the peculiarities of the Horus myth were well-recognized facts among all scholars, the spread of the new science of comparative mythology was giving new interest to Egyptian mythological dogmas in the advanced school of English literature, and I therefore felt that it was necessary for the whole of the subject to be examined from a Christian standpoint, and not to have the myth of Horus used as against the doctrine of the New Testament, before the myth itself had been carefully analyzed, and this analysis I endeavoured to work out in my paper. At the risk of tedious repetition, I must re-assert what has been elsewhere written, that these myths are of an antiquity to which all written Semitic literature has not the nearest approach; even many of the oldest Jewish traditions are of more recent origin than the hieroglyphics which embody many of the Egyptian dogmas. Virtually, the Jew interprets the Old Testament by the Talmud, the date of the compilation of which is well known, while Christian commentaries upon new Testament history were most rife, and also most distinct in the school of Alexandria, the last resting-place of the myth of Horus. I have implied that possibly I have overstated my inferences, let me explain in what manner; thus, it might be inferred from certain passages that peculiar titles and offices were ascribed to Horus, the Redeemer only, this is then the assertion which I will myself undertake to qualify. The publication of more recently-translated texts in the volumes of the *Records of the Past*, and some yet unpublished texts, which by the courtesy of the editors I am permitted to cite, have proven that very many of the essential names and attributes of Horus were attributed to Ra, Tum, and the other deities also,* they were alike "self-created," "born of a Virgin," "de-

* The following extract from the first chapter of the *Harris Magical Papyrus*, which by the courtesy of the translator, M. François Chabas, I am permitted to quote, affords an illustration of the manner in which the titles of Horus were applied to Ra and Tum:—

PAGE I.

1 CHAPTER of the excellent songs which dispel the immersed.¹
A Hymn to the god SHU.

¹ "The immersed." All dangerous animals lurking in the water.

liverers of mankind," "only-begotten sons"; consequently, it would appear that there was a certain *usus loquendi* governing the interpretation of the Egyptian sacred texts, and it is this *usus loquendi* which has, perhaps, been by myself too little regarded, and the apparently Christian analogies interpreted too literally. Still, for all that, I verily believe that as I have done and as I have read, so in perfect good faith the orthodox Christian fathers and the unorthodox Gnostics and Ebionites understood the hagiography of the Egyptians,

2 Hail to thee, divine flesh of RA (the sun-god),

Elder son, issued from his body,
Selected by him previous to his birth;

3 The valiant, who is Lord of events,
and overthrows the wicked every day.
The (solar) barge is sailing joyfully,
The (solar) ark in jubilation,*

4 as they see

SHU the Son of RA in (his) triumph :
he darts his spear against the serpent.

(Being) RA, he navigates the heaven on high every morning.

The goddess TAFNUT rests upon his head ;

5 She gives her fire against his enemies to reduce them to non-existence.

(Who is) the bolt of RA, the *Oer-haku*,†
the Divine Heir on

6 the throne of his father.

His substance is blended with the substance of RA,
as he is the abundant nutriment which is within him.

He made for him hereditary titles, which are in the writings

7 of the Lord of Sesun,‡ the Scribe of the King RA-HOREMAKHOU,§ in
the royal palace of On,|| consigned, performed, engraved in script
under

8 the feet of RA-HAREMAKHOU,¶

and he transmitted it to the son of his son ** for centuries and eternity.

[Here begins the traditional text of the magical hymn.]

Hail to thee ! who art the Son of RA, begotten

9 by TUM himself, self-existent, not having a mother,

Truth, Lord of Truths ;

Commander, commanding the gods ;

Conveyer of the sacred eye of his father RA.††

* The peaceful and regular course of the sun is a constant proof of the preservation of the order of things in the universe. The joy of the crew rowing the solar barge on the abyss of heaven is therefore an image of common occurrence on Egyptian texts.

† *Oer-haku*, literally, "the great magic power," here personified as a goddess.

‡ Hermopolis magna, the sacred city of Thoth.

§ Ra-Hor-em-akhou, or The Sun-Harmakhis, is the full royal name of the Sun in his character of first king of Egypt.

|| Heliopolis magna.

¶ Under the feet of a statue of the god.

** Literally, "from generation to generation" (de père en fils).

†† The sacred eye of Ra is the sun considered as a star.

and anxious to win souls to Christ, and feeling sure that there were even beneath the stern enduring granite walls of Egyptian mythology a still more permanent golden substratum of primitive patriarchal faith, they endeavoured by those very analogies to draw the subtly-educated minds of an Eastern people to the simplicity of the truth as it is in Jesus, and used as the strongest argument in favour of the fundamental truths of a re-revealed Christianity, the dogma and the language of the Myth of Horus.

People present him with their gifts,
 10 through his own hands."*
 (By him) is assuaged the goddess OER † in her fury,
 Uplifted is the sky which he maintains with his two arms;
 Every god
 11 yields to his face,
 The King of Upper and Lower Egypt, SHU-SI-RA, ‡
 Life, health and strength,
 The god who was in the first time. §
 The Litany of SHU.
 Thou fillest at daybreak the place of his sacred eye || in On ¶ in order
 to overthrow,

PAGE 2.

1 the wicked far from thy father. .
 Thou allowest the divine boat to proceed in peace;
 his tow-men are in joy, all the gods in exultation and jubilation,
 2 When they hear thy name.
 Thou art the most mysterious, the greatest of gods,
 In that name which is thine of SHU-SI-RA.
 Stop, thou, MAKU, ** son of SET!
 3 I am AN-HER, Lord of the Scimitar. ††

Another Section.

Thou art greater and more ancient than the gods,
 in that name which is thine of goddess AA-OER. ‡‡ §§

* * * * *

* The cultus of the mortals reaches Ra, or god, through the intermediation of Shu the son of Ra.

† The "goddess Oer-t," or the "great goddess," a name of the lion-headed Sekhet, the chastiser of the wicked.

‡ Shu-si-Ra is the royal name of Shu son of Ra, one of the dynastic gods. § i.e. from all eternity.

¶ The sacred eye of the sun, the solar disk.

¶ Heliopolis.

** Mako (variant Makaï), a mythological crocodile, a form of Set.

†† An-her (the leader of the sky) is the same as Shu.

‡‡ The very great.

§§ Here the divine son Shu assumes the character of a goddess.

||| This magical text will appear in the next volume (X.) of the *Records of the Past*.

ORDINARY MEETING, APRIL 16, 1877.

REV. R. THORNTON, D.D., VICE-PRESIDENT, IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

MEMBERS :— Sir W. Burton, K.C.B., London ; Rev. H. A. Hall, Th.A.K.C.L., Kent.

ASSOCIATES :—S. S. Bacon, Esq., Liverpool ; Rev. J. M. Fuller, M.A., Kent ; Rev. C. Hole, B.A., London ; Rev. F. Kellet, Liverpool ; Rev. A. F. Muir, M.A., London ; Rev. Preb. W. R. W. Stephens, M.A., Midhurst.

The following paper was then read by the author :—

THE LIFE OF ABRAHAM, ILLUSTRATED BY RECENT RESEARCHES. By the Rev. H. G. TOMKINS, M.A.

INTRODUCTORY REMARKS.

SINCE the following paper was printed I have read the translation, by Mr. Russell Martineau, of Professor Goldziher's *Mythology among the Hebrews*.

In this elaborate work it is seriously asserted that Abraham, Sarah, Isaac, Jacob, Esau, and the whole group of patriarchal characters of the Bible in general had no real existence, but are mythical creations belonging to a system of very early development.

The general line of argument is twofold. The author first endeavours to establish an etymology of the proper names suitable to his theory, and then knits up the story, or some selected particulars, into the mythical web. He has thus translated the old fathers far away from the earth and its doings.

For instance, Abram (father of height) is the nightly sky. Sarah (princess) is the moon : so is probably Milkā. Hagar (the flying one) is a solar name. Isaac (the laugh) is originally the sun, but further on "the 'smiling one,' whom the 'high father' intends to slay, is the smiling day, or more closely defined the smiling sunset, which gets the worst of the contest with the night-sky and disappears" (p. 96).

Thus narratives which are distinctly treated in the Pentateuch by Moses, and by Joshua and the Prophets, and the Evangelists and Apostles, and especially by our Lord himself, as veracious history, are resolved into fables, not indeed

"cunningly devised" but spontaneous (p. 31), and the inevitable growth of the human mind according to supposed psychological laws.

I can but hastily at present offer a few thoughts on this mode of exposition.

(A.) And, first, the philological argument is of a very slight texture indeed. The names, for instance, are for the most part not shown to have ever been used with the asserted significance. *Abrâm* was never a word for heaven, nor was even "*râm*" in Hebrew, although "*rayam*" in Æthiopic is adduced; and no instance is suggested in any language where *Abram* denotes anything but a man, and this (by the way) not only in Scripture, for *Abramu* was a court-officer of *Esar-haddon* (Ep. Can. p. 39).

Again, no instance is given of *Yitshak* (Isaac) really denoting the sun or the sunset, or anything else than a man whose name is explained in the Scripture narrative; nor of *Sarah* being a title of the moon in Hebrew or any other language; nor of *Hagar* meaning the sun in Hebrew. The noon-day sun may well be called *al-hâjirâ* (the flying one), as our author tells us, by the Arabs quite consistently with a slave having borne (if so be) a similar name. Moreover *Hakar* (= *Hagar*, for the Egyptians had no *g*) occurs among the Pharaohs of the XXIXth dynasty, so that *Hagar* may after all have been a real Egyptian name. The *Hagarenes*, too, (*Hagaranu* in Assyrian) are mentioned both in Scripture and in an inscription of *Tiglath Pileser II.*

A curious statement is made (p. 158) that "*Sîn* (the moon) and *Gula* of the male triad are balanced respectively by 'the highest Princess,' and by *Malkit* 'the Queen' in the female; and these are only *Sarah* and *Milkah* again." This is hard to understand, for *Gula* was a goddess, not a "male," and could not be "balanced" by *Malkit*. In fact, *Gula* was the "female" corresponding to *Samas* the Sun-god, and "sometimes replaced," says *M. Lenormant* (*La Magie*, 107), "by a group of three wives, equal among themselves: *Malkit*, *Gula*, and *An-unit*." Moreover, the spouse of *Sîn* does not appear to have been called *Sarah*; nor is there any evidence of a goddess called by the Hebrews *Milcah*.

So with *Abimelekh* king of *Gerar*. Professor *Goldziher* includes this title in the "Solar" list, p. 158. Yet the name, like *Abram*, appears in the Assyrian annals (viz., as a prince of *Aradus* in the time of *Esar-haddon*).

If all owners of lofty, or even celestial, titles are to be relegated to the skies, what will become of the Egyptian

Pharaohs, whose especial glory it was to boast themselves in "solar titles"?

We have a good instance of a name which has a very mythical look at first sight, in Ur, Abram's birthplace.

This, however, is happily tied hard and fast to this world by the bricks of which it is built, which bear the name of the town as well as of the god.

The local and personal names of holy Scripture will yield rich results under reasonable inquiry.

(B.) But I turn from philology to psychology, which is made responsible for this line of explanation.

Now the characters and doings of these old fathers and their wives and families are so thoroughly human, so very various, yet each so consistent in itself, bearing such marks of truthfulness under the touchstone of human experience, that this kind of exposition in the hands of such men as the late Professor Blunt has acquired a very distinct and acknowledged value. I appeal from psychology beside herself to psychology sober as a very credible witness to the genuine historical character of the lives of Abraham, Isaac, and Jacob.

(C.) Then again, historical research is daily adding fresh confirmation to our trust in the sacred records. Something of this kind I hope to bring before you presently. Look, for instance, at the episode of Elam. The world had nothing to show of this old powerful highland monarchy conquering as far as the Egyptian borders, except in closest relation to the life of Abraham, and so only through Lot.

But now we read the story in quite a consonant sense in Chaldean muniments.

What right have we to rend out the figure of Abram from the canvas, leaving the Amorite chiefs, on the one hand, and the allied kings of the East, on the other?

(D.) But this form of credulous scepticism is, most of all, a violation of the spiritual consensus of the whole Hebrew and the whole Christian Church.

Professor Goldziher has nowhere so utterly wandered, as in his opinions on religion, whose *genesis* he thus explains (p. 218):—"It must be regarded as established and certain that the psychological process of the origin of religion, a process influenced only in its most advanced stages by ethical and æsthetic forces, is, in the first instance, developed out of the older mental activity which resulted in the creation of myths."

Now this is the very inversion of the order of things established alike by Scripture and archæology; that the spiritual faculties which cry out for the living God germinated

first from the embers of an "older mental activity" exhausted (as the Professor goes on to say) by this creation of myths, is surely the most unlikely thing imaginable in itself, and contrary to what we find in the dedications, prayers, and hymns of earliest date, both in Chaldaea and Egypt. If our author denounces as inhuman, and therefore monstrous in itself, the opinion of Renan that "the Semites never had a mythology," surely we may, on similar ground, repudiate the dogma that all mankind were destitute of religion until in the course of ages they produced it for themselves.

Again, the life of Abraham is a vital part of that unique, coherent, and divine development which St. Paul calls "the purpose of the ages" (Eph. iii. 11), whereby the book of Genesis is intelligibly correlated with the Apocalypse through all the intermediate range of that sacred literature. I appeal to sound historical criticism, to sober psychology, to pure religion; and trust that we may this evening see how consonant these are with a straightforward belief in the record as it stands.*

THE internal coincidences of the Old Testament have been well developed by the late Professor Blunt and later writers, and we may be thankful that the very absence of external evidence of an historical kind enforced this delicate and sagacious line of proof.

2. The researches of later years, however, call us to the study of extraneous records, where we find much in the shape of actual parallel evidence, but far more in the scarcely less valuable form of historical illustration, whereby we may represent to ourselves the conditions under which the worthies of the former covenant fulfilled their course.

3. Every day is adding to the mass and value of this kind of testimony, and to the number of its students.

4. While the few eminent scholars are engaged in their arduous task of original research, it may be permitted to ordinary students of history to utilize the data thus bestowed on them.

5. With such an aim your attention is now entreated to a few points of illustration by which the life of Abraham may be the better appreciated.

* In the notes the initials *T. S. B. A.* signify "Trans. of Soc. of Biblical Archaeology"; *P. E. F.*, "Statements of Palestine Exploration Fund." The word *Records* refers to "Records of the Past"; *Her.* to "Rawlinson's Herodotus, ed. 1862; *Anc. M.* to "Ancient Monarchies," ed. 1871.

6. I shall be very thankful for information where I am ignorant, and correction when I am wrong.

7. Those who are labouring in this field will be well aware how tentative and provisional are all results at present.

UR OF THE CHALDEES.

8. The name of Ur Casdim emerges in Scripture first as the birthplace of Terach's sons. Ur is identified by its own inscriptions with the ruined town Mugeyer, on the west side of the Euphrates, and gave the name Ur-ma (*i.e.* Urland) to the whole region of which it was the capital.*

9. "It is a curious fact," writes the lamented George Smith in his work on the "Chaldæan Account of Genesis," † "that the rise of the kingdom of Ur (*cir.* B.C. 2000 to 1850) coincides with the date generally given for the life of Abraham, who is stated to have come out of Ur of the Chaldees; by which title I have no doubt the Babylonian city of Ur is meant.

10. There is not the slightest evidence of a northern Ur, and a northern land of the Chaldees at this period."

11. The city was the centre of a most fruitful and cultivated district, "the only natural home of the wheat-plant," shady with palm-groves, tamarisk, acacias; and pomegranates, and irrigated with the utmost care.

12. Sir Henry Rawlinson believes that Eden was in this part of Babylonia; and indeed three of the river-names of paradise are found here,—Hiddekel, Gikhkhan, ‡ and Euphrates. It would surely be likely that in "the garden which the Lord planted," the wheat would be a most treasured gift, and it has been held as emphatically a divine boon by different nations.

13. From the port the "ships of Ur" set sail on the sheltered sea, which at that time reached some 120 or 130 miles higher than at present.§

14. If the chief settlement of the Semitic people was then in Arabia, it would be natural for the sons of Shem to prefer the city on that side of broad Euphrates, and open to the pastoral ranges of the desert. It is true, however, that there was a subordinate channel of the Euphrates which ran to the west of Ur. The people of Terach, always keen in commerce, would find here the head-quarters of that "multitude of men of different nations" who had colonized Chaldæa, of whom Berosus writes. The sons of Shem were not the first civilizers of Babylonia. The far-spreading Turanians were beforehand

* *T. S. B. A.*, iii. 229.

† *T. S. B. A.*, i. 300.

‡ p. 298.

§ Rawlinson, *Anc. Mon.*, i.

with their strong stamp of language, laws, religion, science, and polity.

"All appearances," says M. Lenormant "would lead us to regard the Turanian race as the first branch of the family of Japhet which went forth into the world, and by that premature separation, by an isolated and antagonistic existence, took, or rather preserved, a completely distinct physiognomy."*

15. But the first to lay the yoke of despotism on the mingled races in Shinar was a son of Ham, Nimrod, a "son of Cush." The word Kush, "Kusu," identified (like Ham) with darkness, occurs in early Chaldean inscriptions, and the "dark races" are recorded as under the rule of Sargina I. †

16. Abram's childhood must have been familiar with the motley mixture of faces, costumes, and dialects of all the great races into which our scholars have divided mankind; and among all these races his work was ordained to lie.

17. The principal building at Ur was the temple of the moon-god of the same name, which bears on the bricks of its lowest stage the dedication of its royal builder Uruk, probably before Abraham's time.

18. Its huge ziggurat, a sacred observatory-tower of three stages, upholding the shrine, oblong in form, ascended by stairs, rose high above the buildings of the city in its northern quarter.

19. There the royal monthly prognosticators kept the night-watches, holding in highest worship the light that rules the night; chanting their hymns, casting their omens, offering sacrifices, receiving votaries, as represented on their sovereign-pontiff's seal, and within the temple-bounds holding courts of justice in his name.

20. It is a wonderful thing that one of the liturgical hymns to the moon-god Ur (or Sin in Semitic) actually used in this temple in the earliest times, is still preserved in Accadian and Semitic in the British Museum. From M. Lenormant's French translation, ‡ I have rendered it very closely in a somewhat rhythmical cast as follows:—

Lord ! prince of gods of heaven and earth, whose mandate is exalted !
 Father ! god enlightening earth ! Lord ! good god, of gods the prince !
 Father ! god enlightening earth ! Lord ! great god, of gods the prince !

* *Anc. H. of the East*, i. 64.

† But see Schrader's note, *Zeitschr.* 1874, 21. He translates "such as dwell in the West." But in other texts dark races are referred to.—*Chald. Gen.*, 85-86. *H. G. T.*

‡ *Les prem. Civilisations*, ii. 158.

Father ! god enlightening earth ! Lord ! god of the month, of gods the prince !

Father ! god enlightening earth ! Lord of Ur, of gods the prince !

Father ! god enlightening earth ! Lord of the alabaster house, of gods the prince !

Father ! god enlightening earth ! Lord of crowns, duly returning, of gods the prince !

Father ! god enlightening earth ! Awarder of kingdoms, of gods the prince !

Father ! god enlightening earth ! by lowering the proud himself enlarging, of gods the prince !

Timely crescent, mightily horned, doom-dealer splendid with orb fulfilled !
Self-produced, from his home forth issuing, pouring evermore plenteous streams !

High-exalted, all-producing, life unfolding from above !

Father, he who life reneweth in its circuit through all lands !

Lord ! in thy godhead far and wide as sky and sea thou spread'st thine awe.

Warder of shrines in [Accad's] land, and prophet of their high estate !
Of gods and men the sire, of childhood guide, even Ishtar's self thou didst create,

Primeval seer, rewarder sole, fixing the doom of days remote !

Unshaken chief, whose heart benign is never mindful of thy wrongs,

Whose blessings cease not, ever flowing ; leading on his fellow-gods,
Who from depth to height bright-piercing openeth the gate of heaven.

Father mine, of life the giver, cherishing, beholding [all !]

Lord who power benign extendeth over all the heaven and earth !

Seasons, rains, from heaven forth-drawing, watching life and yielding showers !

Who in heaven is high-exalted ? Thou ! sublime is thy behest !

Who on earth is high-exalted ? Thou ! sublime is thy behest !

Thou thy will in heaven revealest, Thee celestial spirits praise !

Thou thy will on earth revealest. Thou subdu'st the spirits of earth !

Thou ! thy will in heaven as the luminous ether shines !

Thou ! thy will upon the earth to me by deeds thou dost declare !

Thou ! thy will extendeth life in greatness hope and wonder wide !

Thou ! thy will itself gives being to the righteous dooms of men !

Thou through heaven and earth extendest goodness, not remembering wrong !

Thou ! thy will who knoweth ? Who with aught can it compare ?

Lord ! in heaven and earth thy lordship of the gods none equals thee !

21. There are yet some mutilated lines to complete this ode of pristine idolatry : calling on this " king of kings " to favour his dwelling, the city of Ur, invoking him as " Lord of rest "

(that is, of the weekly sabbath-rest); and so in broken tones it dies away. In such strains did the kings and priests of Ur adore the moon as it walked in brightness through the crystal-line spaces of a Babylonian sky.

22. The walls, and at least three sacred buildings in Ur, were the work of Uruk, the great builder king. The polytheism of this early age is shown by his having built, besides these, a temple to Nana or Ishtar at Erech; another to the sun-god Samas at Larsa; another to Bel, and a separate one to "Belat his Lady," at Nipur; another to "Sar-ili his king," at Zirgulla. In truth polytheism was stamped on the earth in temples and towers, and the warlike or beneficent works of kings. Hea was the patron of the all-important irrigation; Sin, or Ur, of brickmaking and building; San, the sun-god (Samas), of martial activity; Nergal of war, and the like. Polytheism glittered in scrolls of light in the constellations. It measured days and months, and years and cycles, and by its auguries decided the least ways of house-life and the greatest collisions of nations.

23. It has been observed that gods were identified with stars before the invention of writing in Babylonia, "and that the most natural symbol of a deity was thought to be a star," which is the "*determinative*" of the names of gods in cuneiform inscriptions. "It is plain," writes Mr. Sayce, "that the full development of astro-theology cannot have been much earlier than 2000 B.C.)*" And Mr. George Smith gives the same date for the development of systematic mythology: "2000 years before the Christian era it was already completed, and its deities definitely connected into a system, which remained with little change down to the close of the kingdom."† And M. Lenormant writes at length to the same effect. The whole system, then, had reached its full working order when Abram was born at Ur of the Chaldees, and the family of Terach had been drawn into the stream; for "thus saith the LORD God of Israel, your fathers dwelt on the other side of the flood, even Terach the father of Abraham, and the father of Nachor, and they served other gods."

24. In the sun rising above the mountains of Elam the child would behold a god, defender of the men of Sippara and of Larsa. The morning, the midday, and the evening sun had different divine names, as in Egypt. The sun rose as Tamzi or Duzi (Thammuz), the sun of life, and set as Tutu, god of

* *T. S. B. A.*, iii.

† *Chaldean Gen.*, 52.

death, received by the gigantic guardians into the nether world, as the orb sunk into the far western sea beyond the distant land of Martu, where Abram's destined lot awaited him. The planets had each its own divine name and character. Sulpa-uddu, Mercury, the star of Nebo, was "prince of the men of Kharran," the city which would be the second home of Terach and his house. Jupiter was the star of Merodach, patron of great Babylon.* But it would seem, beneath this sidereal cultus lay a more ancient Turanian system of elemental powers and magic rites used without special sanctuaries. M. Lenormant has even identified Uruk as the founder of a Cushite religion in Chaldæa, expressed by the stage-temples.†

25. At all events, it is clear that by the time of Abram's birth Ur was the scene of great religious and political development, and probably of conflict. In the midst of all the manifold departures of men from "the Living God," the "wreck of paradise" is yet very discernible in the legends based on truth which bear witness to the Creation; the revolt of the evil spirits; the innocence, temptation, and fall of man; the Deluge and salvation of Noah and his house; the Babel-building and dispersion of mankind. No less do we find holy usages of divine origin, such as sacrifice, prayer, and worship; the seventh day held sacred as a day of rest, and called, as Mr. Boscawen has told me, "day of rest of the heart,"‡ and the whole course of public and private life in all their details hallowed by the sanctions of religion. The principal victims were the ram and the bull, the most valued subjects of man, as indeed the first and second signs of the zodiac bear witness. To these a fearful addition must be made. I speak of human sacrifice, which (as Mr. Sayce has shown §) the Semitic tribes learned from the Accadians. A sacred ark was used in Chaldæa in very early times, as in Egypt; for in the 6th tablet of the "Izdubar" series "the ark of his god Sarturda" is mentioned.||

26. The great foundations of revealed truth in the relations of man to God are more and more disclosed by research. The consciousness of sin and its desert and punishment; the origin of temptation and transgression; the fear of death; the reverence and yearning for righteousness, and belief in its

* Sayce, *T. S. B. A.*, iii.

† *La Magic*, 295.

‡ *W. A. I.*, ii. 32, 1.

§ *T. S. B. A.*, iii. 120.

|| *Assyr. Disc.*, 175. Long lists of these arks are given in *W. A. I.*, ii., and they appear to have been sacred barges like the boat of the Egyptian Osiris.—Note by Mr. Boscawen.

reward at the hands of God; the faith in the immortality of the soul, in judgment to come, in a heaven of blessedness and a fiery hell of torment, are all now brought to light as articles of faith among Accadians and Semites alike, but gradually entangled and lost in the "many inventions" of the "evil imagination of man's heart," and losing their only true significance and sanction as men "did not like to retain God in their knowledge." In fact the result of late investigation is that expressed by St. Paul in his epistle to the Romans.

M. Lenormant thus writes:—

When we penetrate beneath the surface of gross polytheism, it [the religion of Assyria and Babylonia] had acquired from popular superstition, and revert to the original and higher conceptions, we shall find the whole based on the idea of the unity of the Deity—the last relic of the primitive revelation disfigured by and lost in the monstrous ideas of pantheism, confounding the creature with the Creator, and transforming the Deity into a god-world, whose manifestations are to be found in the phenomena of nature.*

27. One point of special moment in its bearing on Abraham must be lightly touched, and afterwards more fully dealt with—I mean the resurrection of the dead. This belief was especially associated with Marduk (Merodach), the great god of Babylon. His Accadian name was Amar-utuki, or Amar-ud, and his worship must have been most ancient, as it was restored at Babylon by Agu-kak-rimi, whose date Mr. G. Smith places as "most probably more than 2000 years before the Christian era";† and he is mentioned as the son of Hea in the tablet of the seven wicked spirits.

28. It was attributed to him that he could raise the dead to life, and he is himself "one of the types of those gods," writes M. Lenormant, "who die and rise again to life periodically, characteristic of the religions of the shores of the Euphrates and Tigris, of Syria and Phœnicia. The famous pyramid of the royal city of Babylon passed for his tomb, where they showed to devotees his sepulchral chamber, afterwards plundered by Xerxes, which they called "*the place of rest of Marduk*."

29. The immortality of the soul and future blessedness of the righteous have been illustrated from the cuneiform texts

* *Anc. Hist. of the East*, i. 452.

† Note by Mr. Boscawen. This date must be placed about B.C. 1900, as the five kings in my paper are evidently of the Median or Elamite dynasty.

in an interesting monograph by M. Oppert, and also by Mr. Fox-Talbot and Mr. Boscawen in the Transactions of the Society of Biblical Archæology. "There is," says Mr. Fox-Talbot, "a fine inscription not yet fully translated, describing the soul in heaven, clothed in a white radiant garment, seated in the company of the blessed, and fed by the gods themselves with celestial food."*

30. Those who are at all versed in Egyptian lore will recognize the clear similarity of these dogmata with those of common origin (as I believe) carried to the Nile at a very early period of migration, and there elaborated by the mystical genius of that intellectual and most religious people.

31. By all this teaching and belief the boy Abram must have been surrounded in his father's house at Ur of the Chaldees. As to the name Chaldee, it was the designation of a people of Southern Babylonia,† and the name Khaldi in the Burbur (*i.e.* Accadian) dialect (as Prof. Rawlinson informs us), represents the moon-god. But the Hebrew name Casdim seems to be formed from the verb "Casadu," to *possess*; in Assyrian, "*Osidu*" will be the *nomen agentis*, says Mr. Sayce in his first Assyrian Grammar.‡ Thus the Casdim would be the possessors, the lords of the land, and not the subject race. [The Elamite conquerors of the land.—*Mr. Boscawen.*]

32. I have shown as in a rough sketch the main points of the position occupied by the house of Terach, and that it was not as a "simple shepherd" that Abram was brought up, but in the central and most complex civilization that the world then knew, "the cradle of Semitic civilization," as Dr. Birch has called it, "highly civilized and densely populated at a time when Egypt was still in its youthful prime." Abram knew what the world was, and was conversant with its ways before he was called out of his father's house; and by the guidance of Jehovah he followed the stream of the varied migrations of illustrious races, and his tent-pegs were everywhere struck into ground already rich with the harvest of the past, and broadcast with the seed of the world's future destiny.

* *Records*, iii. 135. "Since translated by me, *T. S. B. A.*, vol. iv."—*Mr. Boscawen.*

† Rawlinson's *Her.*, i. 256, 538, and iv. 206. *Note by Rev. A. H. Sayce.* Khaldi was the supreme god of the Alarodian inscriptions of Van, which have not yet been deciphered. The Minni had nothing to do with the Accadians, and the supposition that Armenia, like Accad, was ever called Burbur, "the Summits," is incorrect.

‡ p. 14.

33. It is not difficult to trace the conditions of life which would entangle a faithful servant of "the holy One that inhabiteth eternity" in those days.

34. All judicial determinations, for instance, and even many commercial bargains, were transacted in the temples, and confirmed by oaths on the gods and the king.

35. Of laws affecting the home-religion, too, some fragments have reached us: for instance, "[a man] has full possession of his sanctuary in his own high place. The sanctuary [a man] has raised is confirmed to the son who inherits."

36. But another law, or determination, enacts that "for the future the [judge may] cause a sanctuary to be erected in a private demesne."

37. This law might, one would think, be made an instrument of persecution, such as the Jews believed their father Abraham to have suffered.

38. It is clear that Terach and his house were of high position in their race. Indeed the very names Abram, Sarai,* Milcah, bear the stamp of rank and dignity. And in the tablets the Semitic people appear as the great transactors of business.

39. There would be no escape in obscurity for Abram.

40. Once more men were multiplying their evil inventions, "worshipping and serving the creature more than the Creator," and once more a single family, like that of Noah, was chosen as the treasury of God's truth.

41. The tent of Abram was to be as the ark of Noah;—the open desert as the levels of the great waters.

42. But for this the time was not yet come.

KHARRAN.

"This age," writes Sir Henry Rawlinson of the era in question, "seems to have been in a peculiar sense the active period of Semitic colonization. The Phœnicians removing from the Persian Gulf to the shores of the Mediterranean, and the Hebrew patriarch marching with his household from Chaldæa to Palestine, merely followed the direction of the great tide of emigration, which was at this time setting in from the East westward. Semitic tribes were, during the period in question, gradually displacing the old Cushite inhabitants of the Arabian peninsula.

Assyria was being occupied by colonists of the same Semitic race from

* Sara, from "sar," king.

Babylonia, while the Aramæans were ascending the course of the Euphrates, and forming settlements on the eastern frontier of Syria."*

43. To the same effect Mr. Kenrick writes, "From the history of Egypt we learn that about 2000 B.C. a great western migration of Palestinian and Arabian nomad tribes took place, in consequence of which all Lower Egypt was subject to them for a long succession of years."† Movers, B. I., chap. viii., thinks there are traces of a conquest of Syria and Palestine by Assyria first 2000 years B.C. ‡

44. The celebrated scene of the reception by Khnumhotep of the 37 Amu (at Beni-hassan) during the reign of Amenemha II. of the XIIth dynasty, is evidently connected with this drift of Semitic races. When Sir H. Rawlinson wrote the words above quoted, he would not derogate from the supreme and unique import of the divine call and guidance of Abram. Among all the strangers who passed through the borders of the king of Salem; among all the patriarchal clans who went down into Egypt, whether pressed by famine or led by ambition, there was but one Abram, the father of the faithful.

45. But in surveying the swarming field of history, as we see the highway cast up and the stumbling-blocks removed, and the bounds of their habitation marked out for the sons of men by an unseen hand, we must fairly take into our account all that meets our view; and so we shall enter into the noble confession of Joseph, "So now not you sent me hither but God."

46. In the sacred narrative there is one most suggestive link between Palestine and North-eastern Egypt, which may perhaps soon be fitted into the chronological chain. It is the incidental remark, § "Now Hebron was built seven years before Zoan in Egypt"; that is San, the head-quarters of the Hyksôs dynasties. Now as Hebron was built before Abram came thither, it seems very probable that the Asiatic invaders had already intrenched themselves in Lower Egypt. But there is more to say presently on this matter.

47. When the God of glory appeared to Abram and called him to his new destiny, the first migration of Terach and his house was about 600 miles in length to Kharran. It is clear that Nachor and his family followed them so far, for Kharran was afterwards called "the city of Nachor," and Nachor

* Rawl., *Her.*, i. 365; see also *Anc. Mon.*, i. 54.

† *Phœnicia*, 141.

‡ Kenrick, *Phœn.*, 340, note.

§ Numbers xiii. 22.

called on Abram's God, as we learn incidentally from the lips of Laban.

48. The early part of their way lay through the rich warm Chaldæan levels, and having, as we may suppose, crossed the great river and passed through Larsa and ancient Erech, and seen the ruins of great Babel, they would come to the twin cities of Sippara, and by-and-by, rising near the great place of bitumen-pits, Hit, to the higher undulating levels of the country already occupied by tribes who had gone out from the south to found the great dominion of Assur, they would leave the more advanced cultivation of Abram's native plains, and begin to encounter greater difficulties and untried dangers. But through whatever vicissitudes, in due time passing up the fertile valley of the Belik, the caravan, ascending towards the highlands, entered the resting-place of many years, a second home which became so familiar and dear to Abram that we find him in his old age calling it "my country," and "the home of my kindred." The region was called Padan-Aram, the plain of the highlands, and the name Padan occurs in the very early Chaldæan record of Agu-kak-rimi (probably before Abram).

49. Kharran was by position a very important place. Its name is Accadian, and means *road*, and also, like that English word,* bore the military sense of *inroad*, *raid*, and was familiar with the march of armies and the incidents of war.

50. It was, in fact, a very early and a very late outpost of Chaldæan power. Through it Kedorlaomer and his tributaries must have marched to their distant conquests while yet Abram and his father were dwelling there, and Abram's eyes probably looked upon the long array of Elam, Larsa, Shinar, and Goim with which thirteen years later he was so suddenly to be engaged in conflict.

51. The town still lies on the slope of a low hill, on which stand ruins of an ancient stronghold built of large blocks of basaltic rock. It is described by Mr. Malan,† who has given an interesting sketch in Churton and Jones's edition of the New Testament, the only view of Kharran I have yet seen.

52. The plain was irrigated in true Chaldæan style by water-courses from the Belik; and to the west is the plain of Seruj, fertile, and thick with villages of the same ancient *beehive*

* 1 Sam. xxvii. 10: "Whither have ye made a *road* to-day?"

† *Phil. or Truth*, 93.

houses of stone which we see in Assyrian reliefs, and may suppose to have clustered there in the sight of Abram.

53. The indications of Chaldean worship at Kharran reach back as far as the times of Terach, as Mr. Sayce has shown,* and the city was from first to last bound up with the cultus of the sidereal pantheon.

54. In the British Museum is a seal-cylinder representing a priest in adoration before an altar with a star above it. In the distance is a diminutive figure. Behind the priest is inscribed in cuneiform, "the god of Kharran." Probably the star is Mercury, which, as we have seen, was lord of the men of Kharran. Its gods are mentioned in Rabshakeh's message to Hezekiah. "In the fifth century," says Sir H. Rawlinson,† "the Sabæans of Harran worshipped the sun as Bel-Shamin, the lord of heaven, and at a later period they used the Greek name of Ἡλιος; and again Gula, under the name of Gadlat and Tar'ata (Atargatis or Derceto) are given by St. James of Seruj, as the tutelary goddesses of Harran in the fifth century of Christ." Still later are records of the same idolatry, but in the midst of all we find that "the Sabians had a chapel which was dedicated to Abraham."‡

55. Thus the "father's house" was still within an outpost of the old Chaldean rule, a very imperfect approach to the land which Jehovah would show them.

56. Still in the highways of the caravans and line of march of armies, still surrounded by the worship which they had renounced, they were dwelling; but Terach was well stricken in years, and here he was minded to abide and end his days without crossing the great river into the land of the stranger, and the unknown places of Martu, toward the sea of the setting sun; and hither came Nachor and Milcah, and their house, and they prospered in the fertile and beautiful land where the tender mercy of God allowed Abraham to bury his father at the age of 205 years, perhaps in one of the rock-hewn tombs of Urfah.

THE MIGRATION TO CANAAN.

57. The call of Jehovah after Terach's death fairly launched Abram in his tent-life as a stranger and pilgrim. And this began when he was seventy-five years old. The conditions of this life are very well described by Dr. Kitto in his *Daily*

* *T. S. B. A.*, iii. 168, and ii. 247.

† *Her.*, i. 503, note.

‡ Kitto, *Bib. Cyc.*, "Harran."

Bible Readings. His route probably lay across the Euphrates about 17 miles south of Bir-edjik at Jerabolus, where the lamented George Smith has so lately discovered the true site of Carchemish, and through Aleppo, where there are still quaint traditions of Abraham, Hamath, Emesa, which is not far from the site of the great Kadesh on the Orontes, where the arms of Egypt were to meet in stern conflict the chivalry of the sons of Kheth, and so to Damascus.

58. There seems evidence enough to connect Abraham with Damascus. Hence his way would lie up the long ascents of Bashan to the high mountain-brow, from which he must have first beheld the goodly prospect of the land of Canaan described so well by Dean Stanley, and since by Dr. Tristram and the Rev. A. E. Northey.* At last, descending the deep glen of the Yabbok (Zerka), and probably crossing the rushing Jordan at the ford of Damieh, he stood on the promised ground. The ascent of the Wady Far'ah would bring him to lovely Shechem. Let us remind ourselves that here Abraham's first altar was reared in the Holy Land; here the law was proclaimed by Joshua; hard by (as it would seem) John the Baptist received the penitent crowds at Ænon near to Salim, and that at Jacob's well He whose day Abraham rejoiced to see first revealed Himself as the Messiah.

THE CANAANITE.

59. Here, indeed, was the land, but "the Canaanite" was beforehand. "The Canaanite and the Perizzite dwelled [were settled] then in the land." The sturdy Amorite held the fastnesses; roving Perizzites were scattered afield; Sidonians and Arvadites colonized the coasts; the powerful sons of Kheth, dreaded even by Egypt, lay in the goodly land, and perhaps even then possessed the heights of Lebanon. Beyond the Jordan lay savage Rephaim, terrible Emim, uncouth Zamzum-mim, degraded Khorites, and Abram still went childless among men.

60. Yet here, said Jehovah, "unto thy seed I will give the land." Abram believed Jehovah, and it was counted unto him for righteousness.

61. The land is called in the book of Genesis by no other name than "the land of Canaan." Canaan is a name also known in the Egyptian and Assyrian records in the form

* P. E. F., April, 1872.

Kanana, and Mr. G. Smith has met with Kanunai in Babylonia.* But it is nowhere said that Canaan was the original name of the land. The Canaanites seem to have migrated from the shores of the Persian Gulf. Canaan was the son of Ham (Kham), and the land of Canaan lay next to the land of Kham, and became its most formidable rival and conqueror.

62. But Egypt was a great full-grown power splendidly civilized, and the pressure came on it not as an organized military invasion, but a gradual pacific migration; not a deluge, but a stealthily rising tide.

63. It was not likely that any tribe of the sons of men, Amu, Shasu, Sakti, or whosoever, should stay in Palestine without trying to "go down into Egypt." Canaan was a highway to Egypt. The Delta was as an antechamber thronged by motley company. The strong chain of fortresses built by Amenemha I., with its connecting wall to keep out the marauding hordes on the north-east, had not been effectual in reality. Whether it were before or after Abram's visit to Egypt that the rule of the Hyksôs Pharaohs was established in Lower Egypt, at all events we may believe that the power represented by those sovereigns had already strongly developed itself, and was dominant, perhaps, in fact, if not in form. Zoan had been built seven years after Hebron (Khebron), and presumably by the same builders. One of its names is identical with that of Tyre.† Statues of Amenemha I. and Osortasen I. have been found there by Mariette-Bey,‡ and even an inscription with the name and titles of Pepi Merira of the VIth dynasty. These may indicate that Zoan was built and carried on as a commercial settlement with the good-will of these strong monarchs, "from whose limits of government we should perhaps except (says Brugsch-Bey) the parts of the Delta on the eastward side on the shores of the Lake Menzaleh, inhabited by a mixed race of Egyptians and Semitic dwellers, whose influence soon prevailed in a manner so disastrous to the Pharaohs and their country."§

64. It is interesting to notice that in the time of the XIIth dynasty seal-cylinders of the Babylonian fashion began to be used in Egypt.||

* *Chaldean Gen.*, 296. *Eponym. Can.*, 67.

† Brugsch, *Histoire*, 134-148. *L'Exode*, 21.

‡ Maspero, *Hist. Anc.*, 126.

§ *Hist.*, 69.

|| Birch, *Cat. Eg. Rooms B. M.*, 74. "There is a cylinder of the time of Papi of the VI. dynasty." Note by Dr. Haigh.

65. With regard to the Canaanite immigration into Palestine, two most remarkable Egyptian records have been used to prove that it could not have taken place before the early times of the XIIth dynasty. The argument has been brought forward by M. Lenormant.

66. I. The inscription of Una of the VIth dynasty* of the reigns of Teta and Pepi Merira. This records the reduction by repeated campaigns of a revolted people of the Amu called Heru-sha (lords of sand) who, evidently were inhabitants of the regions to the north-east of Egypt. The land of Khetam is mentioned as the scene of their revolt. This is identified by Brugsch-Bey in his memoir on the Exodus as the desert just beyond the eastern border of Lower Egypt. But these people possessed a very fertile region to the north, with corn crops, figs, and vineyards, and bordering on the sea. A place is mentioned whose name is read by Dr. Birch *Takhisa* or *Takheba*, by Brugsch *Terehba*. Of this more presently. The people were Amu, a Semitic designation. The discovery of Pepi's name at San is very interesting in connection with this inscription. It is also to be noticed that the first mention of the god Set (afterwards identified with the religion of the Hyksôs, and especially the Hittites) is in an inscription of Pepi.†

67. II. The romantic story of Saneha, of the beginning of the XIIth dynasty.‡ This adventurer found in the same country, as it seems, a civilized people called Tenu, who were Sati, that is Asiatics, and whose ruler bore the name of Ammu-anishi, as read by Goodwin, or Ammu-nensha (Chabas). We do not find the name Herusha here, but that of Nemmasha occurs twice.

68. Now M. Lenormant argues that these documents disprove the settlement of the Canaanites in Palestine up to the time of Amenemha I.§ But this inference seems to me precarious, for the Canaanites (Hittites, Amorites, &c.) spoke a Semitic language, and the Hyksôs were known to the Egyptians as Sati. In fact the Egyptians do not seem to have distinguished the Canaanites as anything different from the Asiatics commonly known to us as Semitic.

* *Rec. of Past*, ii. 3. Chabas, *Etudes*, &c., 2nd edition, 114. Brugsch, *Hist. d'Ég.*, 71.

† *T. S. B. A.*, iii. 113.

‡ *Records*, vi. 131.

§ *Anc. Hist. of the East*, ii. 148. Note by Dr. Birch on the *Nemsha*. "The Nemsha always have appeared to me to be possibly the *Nomades* or *Nomads*, *Nomas* of Herodotus." "Numidians," *Nomades*, "Wandering tribes of Asiatic origin." Smith, *Class. Dic.* This would agree very well with the text. *H. G. T.*

69. The date of Zoan being carried back to the time of Pepi proves the earlier building of Hebron; but it is clear that this stronghold of the Anakim must have been exempt from the warfare of Una which swept away the Herusha from the Negeb. The settled inhabitants have in all ages been beset by the wandering tribes, Herusha, Shasu, Petti, and the like. In Saneha's time the Tenu were at war with the Petti. It is quite possible that the Egyptians might chastise the Herusha-u without incurring hostilities from the Canaanites.

70. We may now, I think, identify the "land of Takhisa."

71. Una landed to the north of this (perhaps at the very ancient port of Joppa), and "subdued the country from the extreme frontier on the north of the land of Herusha," while (apparently) another Egyptian force entered the country from the south.

72. Now the group of towns classed as in the land of Takhisa in the *Travels of an Egyptian*, appears to include Timnath, Debir, Anab, Beth Tappuah, Adullam, Zephath, and Kadesh [Barnea].

73. This is the very country which Una would have swept if he had landed at Joppa, and marched southwards to Khetam, and he would have left Hebron, and such garrisons of the Anakim as Debir and Anab, occupied by their strong and martial inhabitants, who would perhaps have rejoiced to see the success of the Egyptians against their troublesome neighbours. In the same way Kedorla'omer "returning" from El-Paran, and coming to Kadesh-Barnea, "smote all the country of the Amalekites," but kept clear of Hebron. So also did Thothmes III. in those conquests of which Lieutenant Conder has given a sketch-map.*

74. But if we read with Brugsch "Terehba," still it is curious to find on the eastern part of the same region, 'Ain Terabeh and Abu Teraibeh, and Râs Tareibeh; and the dominant tribe of Bedouins in this country is called Terâbin.

75. This southern part of Canaan then, as well as the Sinaitic mining regions, was already held as subject to the suzerainty of Egypt, long before the time that Abraham was there, but the inhabitants, or the nomads, were so unruly that they revolted five times in the single reign (a long one) of Pepi Merira, and had to be reduced by extensive operations, as we have recounted.

* P. E. F., July, 1876.

76. Saneha's adventures led him to the protection of Ammunensha (Chabas) or Ammu-anshi (Goodwin), whose name may indicate the prince (*Nasi*) of the Amu, as M. Chabas has suggested. We find, by the way, Ammu-ladi king of Kedar in the time of Assurbanipal.*

77. The land of Ammunensha was that of the "upper Tenu," and seems to have been much the same as that of Takhisa. In all probability, says M. Chabas, "Tennou corresponded with the maritime part of Palestine, and Aea [Aam, as read by Goodwin] should be found in the triangle marked by the towns of Hebron, Askelon, and Joppa." † [Aea was the province committed to Saneha.] If this be so, then the words quoted by Mr. Goodwin from a papyrus may be relevant: "the boats of Djana and Tennouaton how numerous are they." ‡ But it would seem that the boundaries of Tenu reached near to Atima (Adema or Aduma,—Chabas), which is generally supposed to be the land of Edom.

78. I have sometimes thought that the Adema of Saneha may be the Admah of Genesis x., which had a separate king in Abraham's time.

79. "Upper Tenu" seems to suggest a Lower Tenu, and the name of Ten (plural Ten-nu) may be identical with Zin and Sin. The inhabitants were settled and civilized, and accordingly were at war with the Petti or roving barbarians. They were Sakti, and it seems that they are distinguished from Amu in the narrative, for the Pharaoh says of Saneha; "he went as an Amu: he has been made into a Sakti," and Saneha is called "a son of Mehi (the North), a Petti born in the land of Egypt"; but Amu are mentioned as present at Saneha's duel. Two more names are mentioned as in the Tenu land, viz., Anush and Kashu, besides the Mennu, the *settled* people of the Sati, as M. Chabas explains it. § It is to be hoped that these names may be identified, as every word of these early records is so important.

80. Amenemha I., the founder of the XIIth dynasty, who was Saneha's royal master, had also a servant, whose very name of Mennu seems to show him one of that people, as Saneha himself was an Amu. These points prove (as well as the celebrated reception of the thirty-seven Amu, Absha and his subjects) the friendly intercourse between Egypt and

* G. Smith. *Hist. Assyria*, 171.

† *Etudes Hist.*, 102.

‡ *Camb. Essays*, 1858, 267.

§ *Etudes*, 96. Cooper, *Archaic Dic.*, "Mennu."

these Asiatics, even while the sturdy rebels met with chastisement, as Amenemha I. boasted of making the Sati "come to him like a whelp."*

81. These, then, are records of the South of Canaan before the time when Abram was led thither, as we find them in the monuments of Egypt. They show centres of cultivation, settled rule, and civilization assailed by the restless waves of nomad barbarism, and reveal already the strong predominant power of Egypt, the great monarchy restraining its Asiatic neighbours by expeditions and outlying fortresses and garrisons, and defending its eastern frontier by a fortified line in the "land of Khetam"; all powerless, however, to exclude the western-flowing tide, which perhaps even before Abram's visit had submerged the defences of Egypt in its lower kingdom.

82. It is a suggestive fact that Abram was "confederate" with the Amorite chiefs, and at the same time on good terms with the Pharaoh. It was the power of Elam and Chaldæa on the east which, sweeping the country down to the very confines of Egypt, attacked the Amorites. We do not gather that Egypt was at all hostile to them.

83. This looks like the commencement of the Shepherd domination, and agrees very well with what Manetho says of Salatis fearing the Assyrian power on the east.

84. Let us now return to that remarkable clue which connects Hebron with Zoan, built seven years later, and, as we may well suppose, by the same builders, who are identified by their eponymous "father" Anak, and their "great man" ("Adam") Arba. We have these two names to follow, Arba and Anak.

85. The Rabbinical interpreters gave a numerical significance to Arba, which means *four*, and made the four to be Abraham, Isaac, Jacob, and *Adam*; the last by a strange blunder as to the word applied to Arba.†

86. Now, in view of the symbolic use of numbers for gods, it struck me that Arba might be the number of a god from whom the Anakim traced their descent.

87. I suggested this to Mr. Sayce, asking him whether in a tablet cited by Lenormant any god is designated by the number 4. Mr. Sayce replied that my suggestion was very plausible, but that the tablet in question does not symbolize any god by the numeral 4. "Still" (he said) "there was no

* *Records*, ii. 14.

† See Mr. Grove's article, "Kiriath-Arba," in *Smith's Bib. Dic.*

reason why such a deity might not yet be found"; and he adduced the names of the cities Arba-il (Arbela), meaning four gods, and Arba-nun (Accadian, Sanakha), four fish. After this I mentioned the question to Mr. Boscawen, who, on referring to another tablet, found the number 4 attached to the god Sarturda, who was worshipped by Izdubar at Erech (the *ark* of the god is spoken of), and to whom a very early king of Erech, Sin-gasit, built a temple there. He was also worshipped at Amarda or Marad, in Chaldæa.

88. Here then is the Chaldæan god Arba. The analogy of Esmun had first suggested the guess to me.

89. The god, eighth of the Cabeiri, was well known as a Phœnician deity, and his name is the numeral 8. Let us trace the local names compounded with the element Arba.

90. We find Arba-nun in the South of Assyria; Arba-il (the celebrated Arbela) eastward from Nineveh; Arba-chiveh close to Kouyunjik (Smith, *Dic. of B.*, "Nineveh"); Arbat near Nisibin; Arba-ki in the North of Mesopotamia, meaning Arba-land, with many strong cities in it. The Arbayans are mentioned in an inscription of Shalmaneser II.* (perhaps we may add *Arban* on the Khabour, where most interesting archaic Assyrian remains were found by Layard †). Then in Galilee is Arbela (? Arba-il), perhaps the same as Beth-arbel; to the east of Gadara, on the other side of Jordan, another Arbela; and lastly the celebrated "Kiriath-arba, which is Hebron." Now this line of "Arba" cities and regions traces the very track which was followed by the great migrations from Babylonia to the borders of Egypt, and, as it would seem, the worshippers of Arba brought and planted their god in all these places. It is worthy of notice that the god Arba figures among the ancient heroes given by Abydenus as the father of Ninus (Arbelus), and the same name is given as that of his great-grandfather. ‡ To turn to Anak: If the numerical symbol of Nebo had been 4, one might have thought him the god in question, as his name in Accadian was written Anak §: his number, however, seems to have been 10; but he was the god of the fourth day of the week, and the god of Kharran.

91. It may be that Arba and Anak were not identical, for we are told in the book of Joshua that "Arba was the father

* *Records*, iii. 100. These Arbayans may, however, probably be Arabians, as Mr. Sayce and Mr. G. Smith think.

† *Nin. and Bab.*

‡ *T. S. B. A.*, v. 276.

§ *T. S. B. A.*, iii. 138-521. *An*, God; *ak*, Lord.

of Anak"; and it seems clear that Nebo was not identical with Sarturda, for both are mentioned together in an inscription (translated by Mr. G. Smith)* of the date of Merodach-Baladan I., *circ.* 1320 B.C.

92. These considerations would lead us to suppose that the Anakim were not, like the Zuzim and Rephaim, among the most ancient inhabitants of the land; but that they were immigrants from Chaldæa, as the Canaanitish races in general appear to have been, and, as Dr. Kitto has expressed it, "Cushite [or rather Canaanite?] wanderers from Babel, and of the same race as the Egyptian Shepherd-kings."

93. The land of Anaka in this part of Palestine is mentioned in an inscription of Thothmes III.†

94. The inhabitants of Hebron are called "the Amorite," and afterwards "sons of Kheth"; but they may have been distinguished by the *local* name of Amorite among the descendants of Kheth, who spread widely over the land. The Amorites themselves were locally subdivided, for the Jebusites are called Amorites.‡

95. It is a curious question whether the Anakim were not a distinguished clan among the Amorites. It seems hard to avoid this conclusion. The place was Kiriath-arba when Abraham bought the Macpelah from Ephron, and the sons of Anak were its masters when Joshua, and afterwards Caleb, captured it; and the terms in which the expulsion of the Amorites and of the Anakim are recorded seem to relate to the same transaction. It would seem that the sons of Anak were a tribe of the descendants of Kheth, and Amorites. It is observable that Abraham was on terms of friendly alliance with these Amorites in peace and war, although he religiously eschewed connection with them in marriage for his son; and in the words of the covenant of Jehovah, the time when the sons of Abraham should come again into Canaan was postponed to the fourth generation, with the reason given, that "the iniquity of the Amorite is not yet full"; as if in contrast with the iniquity of the men of the Jordan plain, which was running over.

96. There is, I think, an inclusion of the Amorites among the Khita in the Egyptian records. But the Kadesh of the country of Amaor is distinguished from the Kadesh on the Orontes, the great fastness of the northern Khita. This stood

* *Assyrian Dic.*, 239.

† *Records*, ii. 39.

‡ Maspero, *Hist. Anc.*, 193, and see Josh. x. 5.

on the western side of the Orontes, and had a stream and double moat with bridges.* There is still a lake near Emesa (Homs) called Bahr-el-Kades, through which the Orontes flows, and on this it appears the stronghold stood. The other, taken by Seti I. in his war against the Khita, is especially distinguished as Kadesh in the land of Amaor. The fortified place has no moat, but is on a hill in a cultivated country, and has a pool with plants growing on its sides. It appears to be Kadesh Barnea, and the situation would agree well enough with that of 'Ain Gadis, described by Professor Palmer in the *P. E. F.* statement for June, 1871, allowing for the ancient cultivation, of which he found abundant traces.

97. The sons of Kheth gave their name to the ruling power of the Canaanite league, which came into collision with Egypt on the one hand, and Assyria on the other, in so memorable a manner for centuries. In fact, they became woven into the destiny of Egypt, and impressed themselves in secular and religious matters on its history.

98. Their king Khitasar speaks of his "thousand gods," as also of the "thousand gods" of Egypt; but the dominant cultus was that of Sut or Sutekh (Baal), and Astarata (Astoreth), who are prominently invoked in the celebrated treaty between Rameses II. and Khitasar, the grandson of Seplul, who had made peace with Rameses I. This is the identical corrupt worship which seduced the Israelites from the days of the Judges to the Captivities, and it is expressly identified in Holy Scripture with the idolatry of the Amorites† in referring to Ahab, whose abominations were derived from the Phœnicians.

99. This, then, was the type of false religion which encompassed Abram in the land of Canaan.

100. "The gods of the Amorites" are distinguished in the book of Joshua‡ from "the gods which your fathers served on the other side of the flood"; and the distinction is fully confirmed by research. The gods of Ur were not identical with the gods of Canaan, whatever analogies and links of connection there are between the religions of Canaan and Babylonia on the one hand, and on the other Egypt. But I must not linger in these fields. M. Lenormant thus characterizes the religion of the Canaanites:—

No other people ever rivalled them in the mixture of bloodshed and

* Wilkinson, *Anc. Eg.*, i. 410.

† 1 Kings xxi. 26.

‡ xxv. 15.

debauchery with which they thought to honour the Deity. It seems as though the spirit of their religion conspired with their commercial and mercantile life to close their hearts to all generous emotions, and to every elevated sentiment. However clever and expert they may have been in their every-day business, in morality they were always the true descendants of that son who was specially mentioned in the general malediction on the sons of Ham. *

101. Yet this was the result of what is described by Movers as "an apotheosis of the forces and laws of Nature." Such is the legitimate result of losing sight of the Creator in His works, and of the Divine Lawgiver in His laws, and so "departing from the living God."

102. It is extremely interesting to find the evidence increasing on inquiry, of the present existence of the Canaanites from the Lebanon, through the extent of Palestine, as M. Clermont-Ganneau has lately shown in so interesting a manner, to the eastern side of the delta, where M. Mariette-Bey has pointed them out in "the foreigners of strong limbs with stern and elongated countenance, who still, to this day, people the shores of the Lake Menzaleh, and call themselves by the name of Malakin."†

103. The very ethnic names still linger (as we are told in the quarterly statement of the *P. E. F.* for July, 1876) in the old haunts of Hittite, Amorite, and Phœnician; and traditions of Abraham may be still heard from the lips of the children of Kheth, who show where he watered his flocks, and tell that his dogs wore collars of gold; a very credible tradition to those who remember the collars worn by the favourite hounds of the lords of Egypt.

EGYPT.

104. The bearing of Egyptian records on Holy Scripture has been often discussed by the members of this Institute. The questions of chronology are still awaiting further evidence, which, we trust, will some day be forthcoming.

105. I have already noticed very early indications of the frequented pathway from Canaan to Egypt. Indeed, it is true that the eastern side of Egypt belonged rather to Asia than to Africa.

106. Whether Abram's sojourn in Egypt took place during the palmy days of the XIIth dynasty, or in the early time of

* *Manual*, ii. 223.

† *Aperçu de l'Histoire d'Égypte*, p. 29. See Lieut. Conder's interesting paper on *Mukams*. *P. E. F.*, 1877, April.

the Shepherds, it does not seem that he would have encountered so very different a state of things as writers have generally supposed.

107. The points of confirmatory illustration of Scripture have been noticed by M. Chabas and Canon Cook.

108. The honourable reception of the celebrated train depicted at Beni-Hassan tallies well with the favour shown to Abram, even were it by a purely Egyptian court. At the same time the Berlin papyrus, which refers to the seizure of the wife and children of a foreigner for a king of the XIIth dynasty, shows the reasonableness of Abram's dread. Beautiful colossi of this dynasty have been disinterred by Mariette-Bey at San, as well as the very striking memorials of the Shepherd kings. But far more important than any material illustration is the result of researches in the region of religious belief.

109. It is clear that the basis of faith in Egypt was monotheistic, although the huge Sphinx of Ghizeh appears from an inscription at Boulak to be older than the pyramid of Cheops. Still, Dr. Birch has shown that this is doubtful.*

110. The animal-worship of Egypt is dated from Kakan, the second king of the IIInd dynasty; that is, the Egyptians believed that it did not exist before.

111. The great investigation which is now on foot with regard to the Ritual will, doubtless, be fruitful in results of a more exact kind than any hitherto obtained. M. Naville has already, I believe, done much work in the collection of texts.

112. Meanwhile, we may say with confidence, the idea of the immortality of the soul and the future destinies of the resuscitated body afforded the dominant motives of Egyptian religion as brought to bear on the present life.

113. It seems that the idea of death was altogether alien to the minds of the Egyptians; that they did not even conceive of a perfect and absolute death of the body, but set themselves piously to cherish a lingering germ of life which was to spring up into future perfection. A very interesting memoir has been written by M. Pierret on the dogma of the resurrection among the Egyptians.

114. It is to be noted, however, that they did not believe in a general and simultaneous resurrection and judgment, but private and individual in each man's separate history; the judgment previous to the resurrection, and the resurrection of

* "Thothmes III. is represented as the *Sphinx* adoring the god Ra on the apex of the fallen obelisk of Alexandria."—*Note by Dr. Birch.*

the body a gradual revival beginning almost from the hour of death. "The hymns and funereal prayers do not even name death, but only the second life."* They did not believe in a resurrection of the wicked. It was denied to them, and after terrible and prolonged torments their end was annihilation.

115. It is well known how all-important a matter is the judgment to come in the Egyptian Book of the Dead. The standard of conduct is beautiful. "I have given bread to the hungry, water to the thirsty, clothing to the naked, and refuge to the wandering."†

116. It is, however, a terrible thought that there appears to have been no place for the penitent sinner, no belief in the forgiveness of sins, although there was a kind of redemption by Osiris, and prevailing intercession of Horus.‡

117. These things are most important in their bearing on the question whether the old fathers looked only for transitory promises. If Abraham did not account that God was able to raise his son from the dead, then the father of the faithful believed much less of Jehovah than the Babylonians of their Marduk, and the Egyptians of their Osiris.

ELAM.

118. The lovely and varied land of Elam lay on the east of the Tigris (Hiddekel) in its lower course, including a long fertile plain, from which rises the mountain region, beautiful with woods and rivers, where Humbaba, the enemy of Izdubar, was slain by that hero, and whence the Elamites issued to attack the city of Erech. The settlement of Elam was at first the work of the children of Shem, but a Cushite race conquered the land, and from them it acquired the name of Cissia or Cossæa, and the Cissians, who under Khammurabi (or Khammuragas) conquered Babylonia, had evidently long before been powerful there, for Agu-kak-rimi calls himself king of the Cassi, and the five ancient kings mentioned in his inscription bear names identified by Mr. Boscawen as Kassite or Elamite.§ Before the time of Abraham the Elamite con-

* Chabas, *Etudes*, 2nd edit., p. 331.

† "I have an impression that this maxim occurs earlier than any known version or tradition of the Ritual, either on a tomb of the Pyramid-period or in a very early papyrus."—*Note by Miss Amelia B. Edwards.*

‡ "I doubt the intercession of Horus. Mr. Cooper has stated it but on no good grounds."—*Note by Dr. Birch.*

§ *T. S. B. A.*, iv. 132.

queror, Kudur-nankhundi (or Kudur-nakhhunte), "laid his hands on the temples of Akkad and oppressed Akkad," B.C. 2280. In fact, these highlanders of Elam, whence the Akkadians themselves had sprung, continually hung over Babylonia, much as the Hittites and Amorites menaced Egypt. Yet the only scrap of history which, till very lately, recorded any hint of this important early power in the world, was the sketch of Kedorlaomer's campaigns in the 14th chapter of Genesis.

119. Now, however, we have much more light, Kudur-Mabuk, son of Simti-silkhak, in his inscriptions shows that he claimed the rule from Elam to Syria. Sir Henry Rawlinson considered it possible that this king was identical with Kedorlaomer.* Afterwards he seemed shaken, but wrote that "the progress of cuneiform discovery has increased the probability that the two kings were of cognate races, and nearly contemporaneous."

120. In the second edition of his *Five Great Monarchies*, Canon Rawlinson makes Kudur-Mabuk another and later king than Kedorlaomer. But I cannot help thinking that after all Sir Henry's guess may be correct.

121. I am aware that the lamented George Smith did not assign an earlier probable date than about B.C. 1600 to Kudur-Mabuk; but he himself, in his *Notes on the Early History of Babylonia*, drew attention to the remarkable fact that a son and viceroy of Kudur-Mabuk bore a name which may be read as Eriaku, a name almost (or quite) identical with Arioch, king of Ellasar, one of the allies of Kedorlaomer.

122. In his very able work *La Langue Primitive de la Chaldée*, M. Lenormant has entered into this interesting question, agreeing in the identity of Eriaku with Arioch, and of Ellasar with Larsa, which was the seat of his rule; but he thinks that Kedorlaomer was a successor, perhaps the immediate successor, of Kudur-Mabuk.

123. Still, I cannot see any decisive reason why they may not be identical, for, as to the name, it is remarkable that a king of Elam of much later date, Kudur-nakhhunte, son of Sutruk-nakhhunte, calls himself "the servant of Lagamer"† as a title of honour.

124. Why should not Kudur-Mabuk have done the same? M. Lenormant has noticed a double name, Nabu-nadu and

* *Her.*, i. 354.

† *T. S. B. A.*, iii. 479.

133. For, having swept all the country of the Amalekites, he smote the Amorites that dwelt at Hazezon-tamar, that is, En-geddi, in its beautiful nook to the west of the Dead Sea. Having thus cleared his rear and both flanks, he fell at last on the devoted kings below, where lay the battlefield of the vale of Siddim, with its treacherous "slime-pits" of fluid asphalt or bitumen. This kind of ground the Chaldæans would understand very well. Here they routed the degraded citizens of Sodom and Gomorrah, and sacked those towns, taking all the goods and all their victuals, and Lot and his goods besides.

134. So the long train of the eastern forces, cumbered with captives and spoil, drew on its triumphal homeward march.

135. Meanwhile it is remarkable that the fugitives fly to "Abram the Hebrew" for succour, not to Aner, Eshcol, or Mamre.

136. We must not follow these allies in the fine military exploit which alone stands recorded as the proof of Abram's skill and valour in war.

137. But we must notice that the Hebrew expression does not, any more than the Greek κορη (Heb. vii. 1), decide that either of the eastern kings was killed in the action.

138. The more, however, we appreciate the real significance of this history, the more are we convinced of the importance of this decisive defeat.

139. Doubtless Abram intended effectually to prevent the return of this monarch to Canaan. And, whether slain or not, he disappears from the history thenceforward, and the Canaanites regard Abram as "a prince of God." He had at one blow broken in the hour of its crowning triumph the power of the most extensive kingdom which the world then knew; the very heathen power from whose grasp he had himself been rescued by the hand of Jehovah.

140. We must not linger on the meeting with Melchizedek. I have sometimes thought the name of Salem (or rather Shalem) may be derived from Shalamu, the sunsetting or West in Assyrian, as Martu (the West) was applied to Palestine.

141. We find it in the form Shaluma in the records of the conquests of Rameses II.

142. The Kenites are called Salmæans, says Ainsworth, in the Chaldee paraphrase of Gen. xv. 19.

143. Whether there is here any connection of name I cannot say.*

* See, also, Smith's *Dic. of Bible*,—"Kenite."

144. There is much interesting matter with regard to Melchizedek, and the title, "Most High God," in Mr. Malan's *Philosophy or Truth*, and in Professor Plumptre's volume of *Biblical Studies*.

145. The first revelation yet dwelt in faithful souls, such as Melchizedek, and, in their day, Job and Jethro.

146. But the names and titles, and attributes of God lingered on the lips and figured in the inscriptions of Canaanites and Cushites, and sons of Mizraim, who all the while depraved His revelation and changed His glory. The name of Zedek was given to the planet Jupiter at Kharran,* for instance, and Adoni-zedek, king of Jerusalem, was among the Amorite kings overthrown by Joshua, when the iniquity of the Amorites was full. And Zidqa (Zedek) was a king of Askelon, conquered by Sennacherib.†

147. In his dignified reply to the king of Sodom, Abram solemnly claims Jehovah as the Most High God (El 'Elion), and asserts that He is the possessor of heaven and earth: echoing the ascription of Melchizedek, and in common with that great royal priest implicitly excluding all other gods and lords who were worshipped, whether as rulers of the hosts on high, or tutelary masters of races, regions, or cities below. The religion of his own native Chaldæa, for instance, had Anu, god of heaven, Elu of earth, Hea of sea, and patrons of every town.

148. The lifting up of the hands in invocation was of most ancient observance in Chaldæa and Egypt alike. The Egyptian god Ra swears by lifting up the hand, for instance, and so do his worshippers; and the very import of the gesture among men appears in an interesting way. In the prayer of the Amil-urgal given by Mr. G. Smith‡ is the petition to Bel, "O lord of the earth, dwelling in the temple of the sun, take hold of the hands which are lifted to thee!"

149. This also supplies a fine contrast to Abram's oath by Jehovah.

150. The next great transaction is Jehovah's own oath and covenant with Abram to confirm the promise of seed and inheritance by passing between the divided victims. Ephrem Syrus in the fourth century, M. Lenormant tells us, speaks of this practice as in use among the Chaldæans of his time.

151. It is worth notice that the prescribed victims were

* *Her.*, i. 515.

† G. Smith, *Assyrian Hist.*, 114.

‡ *Assyr. Dic.*, 397.

those offered by the Chaldeans in Abram's time, but not by the Egyptians.

152. In Mr. G. Smith's *Chaldean Genesis*, p. 156, there is a direction given in the story of Atarpi, "to cut something into portions, and place seven on each side," which may refer to a similar ceremony.

153. If this paper were not already quite long enough, there are other points in the Life of Abraham which I would have illustrated in the same way. It is possible that I may ask the Council at some future time to allow me an opportunity of returning to the subject. Meanwhile, I trust that the time already devoted by the members present may not be thought wasted, and that much more light may be thrown on the subject by the discussion which will follow.

The CHAIRMAN (Rev. R. Thornton, D.D., V.P.).—It is now my pleasant duty to convey our thanks to the Rev. H. G. Tomkins for his very interesting paper. After one or two communications have been read, the discussion will be open.

The following letters were then read:—

"April 17th, 1877.

"DEAR SIR,—I have twice read, and carefully considered, Mr. Tomkins' paper. All the authorities from which he quotes I have gone over in the course of study, and my own general conclusion entirely coincides with his. Both he and I can only wait for some more, and more direct, documentary evidence for tracing the career and the religious influence of Abraham, and for sketching the history of Canaan, &c., from the call of Abram to the mission of Moses. From the material which Mr. Tomkins has studied, and others also, I have produced a series of notes, which will very shortly appear in two small volumes, now nearly ready for issue by Messrs. Bagster, and on which, I trust, other students will from time to time advance.—Permit me to remain very truly yours,

"W. H. RULE."

"Erdington, 13th April, 1877.

"SIR,—I thank you for the invitation to your meeting on Monday, but I must deny myself the pleasure of accepting it.

"I need not say that it gives me great pleasure to know that such an Institute is in existence. I cordially sympathize with its objects, and should like to be a member, but 'non cuivis homini contingit adire.'

"If the writer of this paper is aware of my contributions to the 'Zeitschrift für Ägyptische Sprache,' it is not likely that anything I could say would be of use to him, since he does not notice them. But if he is not, I venture to think I could supply him with some notes, though too late for Monday morning's discussion. For instance, I have long held that חֲבֵרִין is 'confederacy'; that it is the confederacy of אֲרֵבֶּה 'four,' Aner, Eshcol, and Mamre (which 'three were confederate) with Abram'; and that Arba was not 'a great man among,' but 'a great fortress of, the Anakim.'

"I have much matter in writing about Biblical subjects, which may see the light or not, according to circumstances. Perhaps I may publish my 'Identi-

fication of Nimrod' before long. Whether I write or not, I can always rest in the assurance that the truth will be made clear by other hands, if not by mine.

"D. H. HAIGH."

REV. S. FISHER, D.D.—The paper is a very valuable one, and is exceedingly interesting, especially to those who are experts in ethnology. I have sometimes thought, when looking at those excavations and those documents and inscriptions from Egypt, of what our blessed Lord said when the Pharisees and others exclaimed, "Bid these hold their peace,"—"If these should hold their peace," said He, "the very stones would cry out." The stones from Egypt and from Chaldaea, also, have been crying out for some time to good purpose, and many very glorious truths are borne testimony to by these monuments. It is very clear from what has been brought out lately, that Mesopotamia was the centre or cradle of the human race, and the Bible is very distinct on that point; and the emigration was westward, as the paper states. And it is clear also that man did not come upon the earth as a savage, as has been said by many; by Bancroft, for instance, in his work on the American Indians. Man appeared at first highly civilized and religious. It appears that the farther we go back, religion becomes the simpler, and nearer the truth—the unity of the Deity. It appears again that the first deviation from the truth in the way of worship was the astro-theology, and that agrees also with what the Bible says. We seem to have an approach to the sentiment that raised the first temple to the moon-god in what Job says in the 31st chapter—"If when I beheld the sun when it shined, or the moon walking in brightness, and my heart hath been secretly enticed, or my mouth hath kissed my hand, this also were an iniquity to be punished by the judge, for I should have denied the God that is above." And the fact also stated in the paper, that animal-worship was the next deviation from the truth, is abundantly manifested in the Bible also.

REV. PREB. CURREY, D.D. (Master of the Charterhouse).—There is one point with reference to the earlier forms of religion, as set forth in this paper, which I am not quite clear about. It seems to be the idea, especially of the last speaker, that the earlier religions were more pure than perhaps the later, and that the later became worse and worse as time went on. To a certain extent I have no doubt that was true, but I do not quite gather this from what has been recently brought out with regard to the Accadians, that very remarkable people who were certainly representatives of an earlier civilization than the civilization of the Chaldees. The religion of the Accadians does not seem to have been an astro-theology, but rather an elemental worship, and the forms of Accadian religion, as they appear on Accadian monuments, have reference only to magic, charms, and spirits—not at all a high type of religion. So far therefore, as this is the case, it does not seem to me that the Accadian or earlier civilization in those parts of Mesopotamia had a higher kind of religion; but rather that the development of religion had assumed a higher form in the progress of civilization. As time went on, the number of the gods was increased, and the religion, and this false worship became

more systematic and established. But it does not appear, so far as I can see, that the indications of religion we find amongst the Accadian monuments, point to a higher form of religion, but rather the reverse. It was said that the earlier religion, as represented by the Accadians, was rather a worship of elemental forms, than a more developed astro-theology; and that elemental worship was more corrupt, generally speaking, than the worship of the heavenly bodies. It is an interesting point to consider how far the earlier religious rites amongst the Accadians represent a nearer approach to, or deviation from, the principle of a purer worship. There is an interesting point with regard to the invasion of Chedorla'omar to which it may be worth while to draw attention also. I find in Ménant's account of Babylon, that he quotes the record in regard to the king Kudur-Nakhunte. (Ménant, *Babylone et la Chaldée*, p. 55.) There seem to be three records, each of them giving a date at which the Elamites made their invasion which may possibly be the same as that referred to in Gen. xiv. 1. These three records agree in a rather remarkable manner. The record is given in the account of the exploits of Assurbanipal, about 649 B.C., and the three records in different ways state this invasion and the great power of the Elamites to have been 1635 years before. Two of the records seem to have agreed upon the date 1635, and the other gives 1535. If you add that to 649, you get somewhere near 2300 B.C. for this great invasion of the Elamites. It is, however, very difficult to assign the year to any known era; and therefore the figures representing the date must be accepted with reserve. At any rate we have a very early Elamite invasion like that with which the name of Chedorlaomar is connected in Scripture. It is said in the paper just read that the Accadians still earlier came from the same place as the Elamites, and I think they were also of the same race.

Mr. TOMKINS.—I said they were Turanians.

Dr. CURREY.—And that they came from the same quarter?

Mr. TOMKINS.—Yes.

Dr. CURREY.—The Turanians were of Japhet, and the Elamites from Ham or Ham-Cushite, so far as is known. It is mentioned in regard to the Turanians,—an extraordinary people, amongst whom the earlier civilization, certainly in the plains of Mesopotamia, seems to have spread very widely,—that they scattered themselves very much over the earth; and I recollect, on a former occasion, at one of the meetings here, the Rev. Isaac Taylor gave us some curious dice which he conceived to be representative of certain members of the Turanian race, represented by the Finns. How far this race spread is not known; but it is remarkable that in Italy there remain evidences that the earlier inhabitants came from the far east. Amongst their rites is that of divination by the inspection of the liver. And the like is described by Ezekiel, who speaks of the king Nebuchadnezzar looking into a liver. Thus we get in this country which the Turanians once occupied this very rite practised by the king of Babylon. No doubt considerable traces were left in the cuneiform characters. The character was borrowed from the Turanians. If this was the case in regard to the Turanians, on the other hand, their religion

was characterized by magical incantation and rites of divination. Putting these together, it seems to me we have good reason for supposing that these rites of divination to which Nebuchadnezzar had recourse were like those of the Etruscans. We may infer, with some probability, an identity of race between the Etruscans and Turanians. We also know that these earlier races of Italy were celebrated for the construction of massive walls and colossal buildings. The same kind of enormous structures were left by the Turanians; and here we seem to have other traces of connection between the two peoples.

MR. ST. CHAD BOSCAWEN.—Dr. Currey has referred to the religion of the Accadian people as different from that of the later Babylonians. The religion of the Accadians has been minutely examined by Mons. Lenormant, and appears to have originated in a very simple manner. They came to the conclusion that the actions of every man were due to some spirit that dwelt in him which they called *Zi*. This is what is afterwards rendered by the Assyrian word *Napistu*, "life," a very common expression for soul. And after coming to this conclusion, that all the actions of the body were due to the moving of this inward spirit, they applied this to every other animate and inanimate object—the clouds, the moon, and other bodies were, according to them, impelled by a similar spirit to that which acted in man; and gradually, from applying this to every object in nature, they grew into a system of dividing these into two groups; those objects which benefited man, such as the sun, which shone down upon and warmed him, consequently being favourable and good to him, and the spirit of the storm, as an instance, on the other hand, of the evil one which he feared. With this dualism there was a dualism of priests—those who worshipped simply the good spirits and acted as priests do now, and those who were employed to act as magicians and keep away the evil spirit. This dualism went on for a long time, until a little over 2500 B.C., when Babylon was divided into two parts or kinds of cities. About 2500 B.C. there came a great influx of Semitic people from Southern Arabia, from the region of the Sana. These engaged in trade, until at last they placed a Semitic dynasty on the throne. On the north Accad, the ruins marked by the modern mound of *Akr Kuf*, there grew up a gradually increasing kingdom, which conquered Babylon. The great characteristic of their religion was the star-worship—the worship of the sun, moon, and stars, and one great goddess, the goddess *Istar*, or *Astarte*. In course of time a fusion took place between the old Turanian religion (this is hardly a good name for it; perhaps the best name to use is the religion of the non-Semitic people of *Babylonia*), and this Semitic form; and from this fusion there grew up that fine system of religion which developed into the Assyrio-Chaldean, and finally united the Babylonian dynasty of *Sargon of Agane*. This fusion of religions simplified the priesthood, and the Semitic dynasty seems to have given a great impulse to literature, and the study of astronomy and theology. It was a great reformation, similar to that of the rise of *Buddha* in *India*. This Semitic dynasty lasted probably not very long, but its short rule produced great results. The effect of the fusion of religions on the

civilization of the people was to give an impulse to learning which never died out until the fall of the empire. This dynasty was overthrown by the Elamite, whose invasion was about 2280 or 2300 B.C. This dynasty I believe to be the Median dynasty of Berossus, the old name of the Elamite tribes being Khapirte; and the whole of these tribes seem to have come from the Gordyeen mountains. They seem to have passed to the east of the Euphrates, and the Babylonians to the west; and they formed to the east three great non-Semitic races. There were the Medes, who lay rather more to the east, and did not advance westward until the time of Shalmanesar the Third. Below, there were the Elamites proper, and the Kassi, who were closer akin than the Elamites to the non-Semitic tribes of Babylonia. These Elamite tribes invaded Babylonia, and conquered all the lower portion, while the upper portion of Babylonia and the new colony of Assyria began to form a separate kingdom, and did so probably about this time when the Semitic population of Babylonia were forced to migrate, and gave rise to the migration of Abraham. They passed through Assyria, which was not of sufficient importance to detain them, and by the old route of Kharran (name for road), evidently showing that there was a caravan road through this place to Phœnicia and the west. Kharran appears very early in the inscriptions, and we find it a place of great star-worship, which lasted down almost to Christian times; traces of it having been found there within the last two centuries. I may say a few words in regard to the old name for the land of the west, Martù, or Palestine, the west, to which Abraham journeyed. The old name was Martu. This is composed in Accadian, in the same way as is often found in Chinese nouns. The first of these is Mar, meaning a "path." The second word, tù, means the "setting sun," the name of the god Tùtù being only another form of it, as the god of death. This means, therefore, the path of the setting sun; and if we remember, there was an old town of Phœnicia, called Mardotus, which contains the essentials of Martù, and this was an old coast town or trading station for caravans passing down to Babylonia. One of the important Demi-gods in the Phœnician cosmogony was Usous. This, it appears, was the name of a suburb of Tyre. When Assur-banipal took tribute of Bahal, Usu was a suburb of Tyre, and this was another word for *setting sun*. This word is also explained as evening sun, and the city of Usu would therefore be the city of the setting sun, or of the west. And it is probable this also was another earlier Babylonian trading station on the coast, whence the Babylonians derived the various wares which the Phœnicians and others traded in. When we look at the quantity of books Mr. Tomkins has consulted, and the information he has collected and condensed into less than thirty pages, we must see that there have been many weeks and months of hard work concentrated here.*

* In his *History of Babylonia*, the late Mr. George Smith has alluded at some length to the subjects mentioned by Mr. Boscawen. This work is not yet printed.—Ed.

The CHAIRMAN.—I may say a word or two with regard to the value of this Paper for our objects. We are not a mere archæological society; and therefore, had it simply been an archæological Paper, it might have been said that in making it form part of this evening's proceedings we were not carrying out the object of this Institute; but it is no mere antiquarian essay. We cannot but remark how providential it is that these archæological discoveries have been made at the present moment. At this particular time in the course of events everything is being tested; the foundations of our political and of our religious institutions are alike being examined, and Christianity is not spared the trial. And this time, when our religion is being tested, is the time that divine Providence has chosen to place in our hands materials for the defence of God's Holy Word, which we should not have been able to use one hundred years ago. I wish, farther, to call attention to the Paper as bringing out distinctly the fact, that primeval revelation has been preserved for our times first in the Hebrew and subsequently in the Christian revelation. It is the fashion for those who write and talk to us of comparative mythology and the science of comparative religion to put the Jewish revelation and the Christian completion of it on precisely the same footing with other religions. There are a great many religions in the world, say they, and they all are in the same predicament of having a certain element of truth, and a large accretion of falsehood. Mr. Tomkins has brought out the fact, that Christianity alone contains the truth, and that although other religions have elements of truth in them, these are but distorted fragments of primeval revelation. That is an important fact. On your behalf I beg to thank Mr. Tomkins for his Paper.*

* Dr. Robinson Thornton also sends the following remarks in reference to the introductory statement of Mr. Tomkins's paper:—The Niebuhrian criticism which Professor Goldziher applies to the Old Testament, is something like the Infinitesimal Calculus: it is admirably useful when applied to proper matter, but produces absurd results when otherwise applied. You cannot argue that because $d \cdot x + 2 = d \cdot x + 100$, therefore $2 = 100$: because constant quantities are not amenable to differentiation. But before using the calculus you must know that your quantities are variable. So, before using the Niebuhrian "kritik," you must prove your history to be mythical; you have no right to use it first, and then, because you get a result, say that it proves the story to be a myth. At that rate, I can prove the Professor to be a myth himself. "Professor Goldziher's Mythology among the Hebrews." "Gold-ziher" means "drawer-forth of gold." We have here, therefore, a keynote struck by which to regulate our interpretation. The myth has to do with the finding of gold, and drawing it from its concealment; and the title "Professor," which is the reverse of "Practical," or "Practiser," shows the scheme to have been unsuccessful. And in the word "Mythology," or "telling of tales," we find, at least, a hint that the scheme was elaborated not from a personal world-experience, or a fact-colligation (Thaten-verbinding), but from a generic intuition, moulding itself into form by inventive accretions (Erfindungsanhäufung). This "tale-word" (mythologie) was "of the

Mr. TOMKINS.—I have taken an intense interest in the remarks made this evening by Dr. Curry and Mr. Boscawen. With regard to what the Master of the Charterhouse has said, I think I have a most distinct reply. As to the Accadian religion being of lower grade than the sidereal worship which emerged later in Babylonia, I have to suggest that there was a differentia in religion that varied with the races of men, so that the character of religion corresponded in the same races. The Accadians never seem to have got to a high point of what we call civilization. Others being of a higher intellectual character had the good sense to avail themselves of the elementary truths and outlines which the Accadians left, and brought them up to those higher stages which have been so valuable to the world. Mr. Boscawen has anticipated me in what he has said about the notion of a *δαίμων* in man. They believed all they did was done by the force of the spirit within them, and they paid honours to that spirit. And I am not sure that honour paid to that *Zi* or *δαίμων* was not as high a species of worship as honour paid to the sun and moon that walk in brightness in the sky. It was more immaterial worship. The worship of this spirit is rather like a relic of the worship of the Great Spirit—the God above, and seems to me a higher form of worship than the bowing down to a material object, whether in the heavens above or the earth beneath. That is a consideration in bar of any special condemnation to be passed upon the Accadian system, of which we yet know so little. Though they used magical incantations, which survive amongst the Finns, I am not sure that they can be classed lower than those who worshipped the orbs of heaven, the starry host, and the like. Though their worship involved human sacrifices, which is a very dreadful feature of it, in that there survived a distortion and a travesty of something supreme. And thus I am not sure that they fell below those who had a Pantheistic though more systematized theology. In regard to the liver, it was a most important organ. Everybody who has had it disordered will agree with that view, even in the present century. You will see how important an organ it was considered anciently by the omens drawn from it, of prosperity or adversity—"May thy heart be enlarged, thy liver extended!" was the greatest benediction offered. Even to heavenly creatures the same expression was used, as in a hymn to Ishtar—"May thy liver be enlarged!" An English physician would repudiate that as a blessing.

The CHAIRMAN.—In India, when a man has experienced any piece of good fortune, the remark is, "Surely your honour's liver has become enlarged!"

Mr. TOMKINS.—With regard to another point, the word *Martii*, I was very much pleased to hear Mr. Boscawen use one expression, for a particular

Hebrews." The name (עבר) signifies migrators, or passers-over; and we can easily now comprehend that the sentence refers to a pretended scheme for gold-digging, which induced certain persons to cross the sea, apparently with little profit. It would be interesting to inquire if this fragmentary myth had anything to do with an early discovery of Australia.

reason. He spoke of the composition of words,—as in the Chinese so in the Accadian, by way of apposition. I quite agree with him that a great many proper names are explained by simple apposition. It seems to be thought that in the Semitic languages the second word in a composite name is generally in the position of the genitive case. I cannot help thinking that some of these titles are in this position. I cannot help thinking they are not to be interpreted on strict principles of Semitic grammar. I think we have a key in apposition to getting through the difficulty. That matter about Martu is extremely interesting, and in regard to Salem I believe it originated in the idea of rest and repose—as of the sinking sun. I am glad no member has thrown in any objection in regard to what I have said, and I hope we may be agreed in treating Abraham as an historical personage, all the more that palpable connections between his life, as described in Holy Scripture, and what we are otherwise discovering, are becoming increasingly manifest. I think that these are not merely accidental, much less that Abraham is only a word for the nocturnal sky. I hope we have not quite heard the last of Abraham as there is yet something to say about him.

The meeting was then adjourned.

NOTES by the Rev. D. H. HAIGH, Rev. A. H. SAYCE, Dr. BIRCH, and
W. S. CHAD BOSCAWEN, Esq.

8. *Ur-ma*. I am not satisfied that this is right. Admitting the value *ur* (there are others, *sis*, &c.) for the present, the name of the city is usually *Ur-lab-ki*, but where it forms part of a royal title we have *Ur-lab-ki-ma*. *Ab* (es) is "house," *lab* "city," *ki* "land"; so, though *ma* is a word for "land," I do not think it has that sense here. On the contrary, I take it (as Dr. Hincks did) to be a plural suffix, *ki-ma* "lands"; and this with the more confidence, since the name of the city Nisin is written with the plural suffix *na*, *Ni. si. in. ki-na*, "Nisin lands," in similar context. These *ma* and *na* I compare with the plurals, Heb. ם, Chald. ܢ. So I read "the city land" or "lands."

[Mr. Sayce rejoins. Dr. Haigh is wrong in making *ma* and *na* signs of the Accadian plural. These were *mes*, *me*, and *enc*. *Ma* means "land," as you stated correctly: *Nisin-ci-na* = "of the land of N." *Ci-ma* = "country such-and-such a town."] See *La Langue prim.*, 129.—H.G.T.

12. *Gikhhhan*. In a letter to Mr. Sayce I have long ago objected that this is wrong. גִּיחְחָן in Gen. is certainly distinct from פֶּרֶת. Now we have *Sa. ha. an* an Akkadian synonym of *Pu. rat. lum*. Mr. Sayce, finding an Assyrian value for *sa*, viz. *gi. i*, supplies *gi. i. hu*, and hence deduces Gihhan. My objection is, that we have no right to insert an Assyrian value in an Akkadian

compound, unless we have reason to believe that there was a corresponding Akkadian value. Here we have none such, but, on the contrary, the distinction in Genesis to forbid our assuming it. I believe the four rivers of Paradise are named together in *W. A. I.*, vol. ii. 50.

After *Bar-tig-gar* or *I-di-gal-lat*
and *Ud-kib-nun-ki* or *Pu-rat-tum*,
comes *Gukhaannu* or *Arahtum*.

This must be *Gihon* or *Arazes*.

Then we have *A-la-at*, the river of the god *Mas*, and *A-la-at* is written as a gloss of his name. But he had also the name *A-la-la*, and if $\Sigma\Xi\Upsilon$, *at*, be a blunder for $\Sigma\Xi\Upsilon$, *la*, we may suppose *A-la-la* here. Then *A-lat* is repeatedly given as a synonyme of *Pi-sa-an*, פִּישָׁן מִסֵּן for פִּישָׁן.

[Mr. Sayce writes: Dr. Haigh's objection has much weight, but the doubtful value is found in one of those syllabaries which give the Accadian names and phonetic values of the characters in the third column, not the Assyrian renderings.

I have come across the character with the value of *gikh* elsewhere.

Dr. Haigh's conjecture about *Alat* falls through from the fact that the $\Sigma\Xi\Upsilon$ is not a blunder for $\Sigma\Xi\Upsilon$. As I told him some time ago, his comparison of *Gukhaannu* and *Gihon* strikes me as good.]


20. *Ur* (or *Sin* in Semitic). The moon-god had several names (there were fifteen of them in a tablet in *W.A.I.*, vol. ii. 54). Now, *Ur-* (or *Sis-*) *ki* is the name which is found on the Mugheyer bricks, and a tablet tells us that this was his name in Elam. I have identified Mugheyer builders with the Median or Elamite dynasty of B.C. 2287, so that the use of the Elamite name of the god there would be natural. But, how was the name read? I am inclined to think it was *Sis-ki*, and that the territory of Mugheyer was also named *Sis ki* after him. Thus I explain שִׁשׁ in Jerem. xxv. 26, and li. 41, which was certainly not Babylon, for בָּבֶל is mentioned in connection with it. *Nabu-kudur-ussur* and his dynasty devoted themselves to the restoration of Mugheyer, so that they, and especially *Nabunahid*, might well be called kings of *Shishak*, poetically and prophetically.

[Mr. Sayce writes on this: If Dr. Haigh is right, rather kings "of the city of שִׁשׁ."]

I have to remark on the text: 1. That anyhow the city *Ur* gave its name to the district. The exact names of the city are given by M. Lenormant, *La Langue prim.*, 340. *Uru-unu* (dwelling of the moon-god), the sacred name, and *Uru*, the ordinary name. See also Menant, *Babylone*, &c., 72. 2. *Uru* was an Accadian name of the moon-god, who was called *Sin* in Semitic; however the sign on the *Mugheyer bricks* may be read (*ur* or *sis*).—H. G. T.

38. "It is clear," &c. I do not dispute the fact; on the contrary, I believe that *Terah* was "brother of the king of Warka"; but I do not think their names indicate it. *Abu-ramu*, "Abu is high," was a personal name in

Assyria down to the time of Assur-bani-pal. שרִי Sar-I, "I is king"; I was a divine name, and we know from the tablets that it was equivalent to *Iau, Iahu*.

It is remarkable that the first element in Is-cah and Mil-cah is represented by one sign, , *is, mil*, as if Milcah were a variant reading of Iscah. The former would be "queen"; but as מִיכָה is a variant of מִיכִי, "who, like Iau," so מִיכָה may represent מִיכִי, and mean "Iau is king," the same as Sar-i, afterwards שָׂרָה. [Mr. Sayce writes: "I should say Dr. Haigh's explanation of שָׂרָה is impossible. The word is merely a dialectic form of שָׂרָה, 'queen' (see Delitzsch, &c.). Dr. Haigh is mistaken about *I, Iau, &c.* The supposition rests on a reading now known to be false, or rather misunderstood.]








I think Sarai is *princess (royal-born)* but Sarah, *queen*.—H. G. T.

44. I am firmly convinced that the xxxvii. Amu at Benihassan are the family of Israel. I presented my proofs to Soc. Bibl. Arch., but withdrew my paper because the Council limited me to twelve pages. I believe they visited Num-hotep because he was of their kindred, son of a Nahor, and probably descended from one of those who accompanied Abram to Egypt, and there remained (as I believe Saneham was).

So also I believe that Terah, Nahor, Abram, Sari, Haran, Lot, and Milcah are portrayed on a cylinder from Hillah (figured in Layard's *Nin. and Babylon* [538, and in *Chald. Gen.*, 118]), on which Terah is entitled "brother of the king of Warka, record writer, minister of instruction."

[Mr. Sayce writes: The name *Terah* is not found in the inscription, and though Dr. Haigh long ago suggested to me that Terah and his family were represented on the cylinder, I confess I have never been able to see any ground for the idea.]

65. I believe that Abram and the Hyksos came long before the twelfth dynasty, but as friends; that the Hyksos were the companions of Abram whom he left in Egypt (according to Artapanus), and that it was long before the war broke out.

66. It is especially interesting to note that the city of Set in this inscription was   *Pa-neham*, and this is the same as    the city of Saneham, for , which has been taken to be determinative of  has also the value *am* [see De Rougé, *VI. prem. Dynn.*, 60.—H.G.T.] This, then, is the true reading. [A very interesting note. The town has been identified with the modern "Benha, close to the ruins of Atrib," by Dr. Haigh, *Zeitschr.*, 1875, 99.—H.G.T.]

67. Saneham's story I have discussed at full in the *Zeitschrift*, and shown that he was of the kindred of Nahor.

Ammu, *an shi*, Goodwin, *nen*, Chabas; weight of authority for the former.

[Mr. Sayce remarks on *Tennu*: Harkavy has shown that the word *Tennu* should be read *Temennu*, which is plainly the *Teman* of Scripture. (See his Paper before Oriental Congress at St. Petersburg.)]

85. Hebron and Arba'. I have long held that חִבְרוֹן is "confederacy"; that it is the confederacy of אֲרֵבֶּק "four," Aner, Eshcol, and Mamre," which "three were confederate with Abram"; and that Arba' was not "a great man among," but "a great fortress of, the Anakim."

90. Nebo, Anak. *An* is determinative, and *ak* name of the god. We are all agreed that determinatives are not pronounced.

142. The home of the שְׁלֵמָאִי had the same name as Melchizedek's kingdom; whether it was the same is another matter.

NOTE by W. ST. CHAD BOSCAWEN, Esq.

28. Marduk. One of the most beautiful characteristics of this god was that of the "Mediator and Saviour" between the gods and man, the vanquisher of evil, and the giver of life.

See the following translation:—

1. King of the world and the land *par excellence*.
2. Eldest son of the king of the great deep (Hea).
3. Of heaven and earth the regulator.
4. God of gods.
5. Who in heaven and earth has no rival.
6. Prince with Anu and Bel.
7. Merciful among the gods.
8. Merciful one who the dead to life raises.
9. (With) Anu the king of heaven and earth.
10. King of Babylon, Lord of Bit Saggal.
11. King or the temple of Life, Lord of the temple of the great life.
12. Heaven and earth are thine.
13. The fulness of Heaven and Earth are thine.
14. The eye of life is thine.
15. Death and living are thine.
16. King of the noble oracle of the deep thou art.
17. Mankind, even the men of the black race.
18. All the breath of the living and all creatures that exist.
19. The four quarters, all that have being.
20. Great prince of the hosts of heaven and earth.
21. All are thine.

The above invocation forms part, not of the liturgical collection, . . . but of the magical collection (*Mus. Brit.*, K. 2962). See *Les Prem. Cic.*, ii. 177, where M. Lenormant gives a translation. It is a prayer to Marduk in the nature of exorcism of evil spirits of disease. [See Mr. Boscawen's article, *T.S.B.A.*, iv. 297, where he gives the text.—H. G. T.] Mr. Boscawen has kindly sent me the following extract from his forthcoming Assyrian exercise-book:—The connection between Mesopotamia and the shores of the Mediterranean Sea dates from a very remote period; the armies of the early kings of Babylonia reached its shores, and received tribute from its kings. (*W.L.J.*, i. p. 2, No. iii., Inscription of Kudur-Mabug, and

ANNUAL GENERAL MEETING,
HELD AT THE HOUSE OF THE SOCIETY OF ARTS,
MONDAY, JUNE 4, 1877.

THE REV. ROBINSON THOENTON, D.D., V.P., IN THE CHAIR.*

The HONORARY SECRETARY, Capt. F. PETRIE, read the following Report:—

ELEVENTH ANNUAL REPORT of the Council of
the VICTORIA INSTITUTE, OR PHILOSOPHICAL SOCIETY
OF GREAT BRITAIN.

Progress of the Institute.

1. In presenting the ELEVENTH ANNUAL REPORT, the Council desires to state that the progress of the Society continues, and it is satisfactory to find the undiminished interest taken in its welfare by those, at home and abroad, who become its Members and Associates, as with them rests, in no small degree, the future of the VICTORIA INSTITUTE, and the accomplishment of its objects.

2. The election of the Vice-Presidents and Council has been carried out in accordance with the proposition agreed to at the 1874 Annual Meeting, namely, by voting-lists

* The President being unavoidably detained at the House of Lords.

being forwarded to the Members. The following have been elected:—

President.—The Right Honourable the EARL OF SHAFTESBURY, K.G.

Vice-Presidents.

The Right Honourable the EARL OF HARROWBY, K.G.

PHILIP HENRY GOSSE, Esq., F.R.S.

CHARLES BROOKE, Esq., M.A., F.R.S., P.R.M.S., &c.

Rev. ROBINSON THORNTON, D.D. C. B. RADCLIFFE, Esq., M.D., &c.

W. FORSYTH, Esq., Q.C., LL.D., M.P. Rev. Principal T. P. BOULTBEE, LL.D.

Hon. Treasurer.—WILLIAM NOWELL WEST, Esq.

Hon. Sec. and Editor of Journal.—Capt. F. W. H. PETRIE, F.R.S.L., F.G.S., &c.

Council.

ROBERT BAXTER, Esq. (*Trustee*).

Rear-Admiral E.G. FISHBOURNE, R.N., C.B.

ROBERT N. FOWLER, Esq., M.A. (*Trustee*).

WILLIAM H. INCE, Esq., F.L.S., F.R.M.S.

ALEX. M'ARTHUR, Esq., M.P.

EDWARD J. MORSEHEAD, Esq., H.M.C.S.

(*Hon. Foreign Corresp. Sec.*).

ALFRED V. NEWTON, Esq.

WILLIAM M. ORD, Esq., M.D.

WILLIAM VANNER, Esq., F.R.M.S.

S. D. WADDY, Esq., Q.C., M.P.

ALFRED J. WOODHOUSE, Esq., M.R.I., F.R.M.S.

Rev. J. H. RIGG, D.D.

Rev. Prebendary C. A. ROW, M.A.

Rev. Canon J. H. TITCOMB, M.A.

J. A. FRASER, Esq., M.D., I.G.H.

Rev. CHARLES GRAHAM.

H. CADMAN JONES, Esq., M.A.

Rev. J. G. WOOD, M.A., F.L.S., &c.

Rev. W. ARTHUR, D.D.

C. R. BREE, Esq., M.D., F.Z.S.

JOHN ELIOT HOWARD, Esq., F.R.S., F.L.S., &c.

Rev. G. W. WELDON, M.A., M.B.

Rev. Principal J. ANGUS, M.A., D.D.

J. BATEMAN, Esq., F.R.S., F.L.S.

The MASTER of the CHAFTERHOUSE.

Rev. Professor H. WACE, M.A.

D. HOWARD, Esq., F.C.S.

3. The library has received several valuable additions through the generosity of Members, and several English and Foreign Scientific Societies who exchange *Transactions* with the Institute.

4. The Council regrets to announce the decease of the following valued supporters of the Institute:—The Hon. Sir T. O. Archibald (M.); The Hon. W. Ashley (M.); J. Beeston, Esq. (M.); T. Clegg, Esq. (F.M.); A. J. Dodson, Esq. (M.); J. Gardner, Esq. (A.); A. E. Gayer, Esq., Q.C., LL.D. (M.); W. S. P. Henderson, Esq. (A.); The Ven. Archdeacon Hill (A.); Rev. Canon S. Lysons (M.); Rev. A. De La Mare (F.M.), one of the Members of the original Organizing Committee of the Society, and ever since an active Member of the Council; R. Napier, Esq. (F.M.); Rev. G. T. Perks (M.); The Right Hon. the Earl of Shrewsbury (M.); B. Shaw, Esq. (A.); Rev. S. D. Waddy (F.M.); T. Wilkinson, Esq., M.D. (M.); Rev. T. W. Wrench (A.).

5. The following is a statement of the changes which have occurred during the past twelve months :—

	Life		Annual	
	Members.	Associates.	Members.	Associates.
Numbers on 1st May, 1876	30	14	327	297
Deduct deaths ...	—	—	13	5
	30		314	292
Withdrawn*..... (many temporarily)	—	—	22	32
			292	260
Changes			— 3	+ 3
			289	263
Joined between May 1st, 1876, and June 1st, 1877	2	4	33	57
	32	18	322	320
	50		642	
Total ... ..	...	...	...	692
Extra Associates ...	...	...	...	0
			701†	

Hon. Foreign Correspondents and Local Secretaries, 15.

Finance.

6. The Audited Balance Sheet of the Treasurer for the year ending 31st December, 1876, is appended, showing a balance in hand of 8s. 5d. Amount now invested in the New Three per Cent. Annuities is £697. 11s. 7d.

7. The arrears of subscription are now as follows :—

	1872.	1873.	1874.	1875.	1876.
Members	1	2	3	3	16
Associates.....	1	1		4	10
	2	3	3	7	26

* Those influences which this year have greatly affected the finances of all Societies are somewhat felt by this Institute.

† Joined during May, 3 Members and 6 Associates; total, 677, and 13 = 690. The total number on the 1st of January, 1871, was 201.

8. The estimated ordinary assets of the Institute for the current year, exclusive of arrears and of new subscribers, are as follows :—

Annual Subscribers.	£.	s.
322 Members, at £2. 2s.	676	4
320 Associates, at £1. 1s.	336	0
Vice-Patrons, Life Members, and Life Associates.		
(Dividend on £697. 11s. 7d.		
Three per Cent. Stock) ..	19	5
Total.	£1,031	9

9. Meetings.

MONDAY, December 4, 1876. — On "The Myth of Ra." By W. R. COOPER, Esq., *Soc. Biblical Archaeology*.

MONDAY, January 8, 1877—(instead of on New Year's Day).—"On the Forms of Causative Energy for Material Creation." By R. LAMING, Esq.

—"Materialistic Philology." By J. M. WINN, Esq., M.D.

MONDAY, January 15.—"Christianity considered as a Moral Power." By Professor LIAS, St. David's College, Lampeter.

MONDAY, February 5.—"On the Structure of Geological Formation as Evidence of Design." By DAVID HOWARD, Esq., F.C.S.

—"Fossil Agricultural Implements." By Prin. J. W. DAWSON, LL.D., F.R.S.

MONDAY, February 19.—"On Comparative Psychology." By E. J. MORSHEAD, Esq.

MONDAY, March 5.—"The Bible and Modern Astronomy." By the Rev. Canon BIRKS, M.A., Knightbridge Professor of Moral Philosophy, Cambridge.

MONDAY, March 19.—"New Analysis and Scientific Solution of the Problem of Language." By Rev. A. CASTLE CLEARY, M.A.

MONDAY, April 9—(the first Monday in the month being Easter Monday).—"On the Ethics of Belief." By the Rev. Professor H. WACE, M.A. (At the Society of Arts' House, John Street, Adelphi.)

MONDAY, April 16.—"The Life of Abraham, illustrated by recent researches." By the Rev. H. G. TOMPKINS.

MONDAY, May 7.—"On the Indestructibility of Matter." By the Rev. J. CHALLIS, M.A., F.R.S., F.R.A.S., Plumian Professor of Astronomy, Cambridge.

ANNIVERSARY, MONDAY, June 4.—(At the Society of Arts' House.) Address by J. E. HOWARD, Esq., F.R.S.

MONDAY, June 18.—"The History of the Alphabet." By the Rev. ISAAC TAYLOR, M.A. (At the Society of Arts' House.)

10. The meetings during this session have been as well attended as usual, the Anniversary and the meetings of the 9th of April and the 18th of June being held at the House of the Society of Arts, the rooms of the Institute not affording adequate accommodation.

*Publications.**

11. The Tenth Volume of the *Journal of Transactions* has been issued, and the several Quarterly parts for the current year will appear in due course.

12. In the publication of the *Transactions* the Council has continued the practice of printing in full the papers read, and the discussions thereon, so that country and foreign Members, although unable to be present at the meetings, may enjoy, as far as possible, the same advantages as those attending them ; and in many instances communications in regard to important points not taken up at the meetings have been sent in by country Members. These, being added to the *Journal*, have enhanced its value.

13. Many Members at home and abroad continue to use the papers in the *Journal* as lectures, or as the basis of such, in their neighbourhoods ; and the foreign as well as the home demand for the *Transactions* has grown steadily.

14. As it is very desirable that the translation of the more popular papers into foreign languages should be more extended, steps are being taken with that object.

15. About 50,000 copies of the papers in the *Journal* have been published during the past two years.

16. *The People's Edition.*—With a view to further opposing that scepticism of the day arising from erroneous views as to the true results of scientific discovery, or from the rash adoption of such pseudo-Philosophical or quasi-Scientific theories as tend to undermine the public belief in revealed religion, the Council decided in 1874 to commence the issue, in a cheap form, of single copies of some of the papers in the *Journal of Transactions* ; seven papers are now so published. The Institute has now nineteen bookseller-agents in the various larger towns of the United Kingdom for the sale of this Edition, and it has been much sought for, for circulation amongst friends and distribution amongst the

* The *Transactions* now extend to ten volumes, containing the papers and discussions thought worthy of publication. Some are purely scientific, such as *e.g.*, the paper on the Isomorphism of Crystalline Bodies, and some take up those questions of Science or Philosophy which bear upon the truths revealed in Scripture,—these latter are taken up on account of the assaults made in the name of Science or Philosophy upon Revelation, and with a view to elucidating the Truth, and getting rid of such philosophic or scientific theories as might prove baseless ; theological questions being naturally outside the Institute's objects, are left for other Societies and ministers of religion.

intelligent working classes in manufacturing, mining, and other districts; it may be mentioned that many have reported that they find them of much use as works of reference, especially in districts where lecturers or literature advocating philosophical or scientific theories tending to scepticism are common.

17. The good understanding existing between this and other scientific Societies continues to increase, and with many of the leading Societies at home and abroad the Institute exchanges *Transactions*.

18. Finally, it is most important that the VICTORIA INSTITUTE be maintained in a state of thorough efficiency by its present supporters. The President and Council have therefore thought it desirable to ask the co-operation of all Members and Associates for the important purpose of raising the numerical strength of the Institute by introducing new Members; the extent and value of the work done will be increased thereby, and every addition may become a means of extending the Society's usefulness.

In conclusion, the Council desires to express its thankfulness for the success which continues to attend the Society's exertions.

Signed on behalf of the Council,

SHAFTESBURY, *President*.

DONATIONS TO THE LIBRARY FUND

1876.

	£.	s.	d.
J. W. LEA, Esq.	1	0	0
Anon. (H.P.)	1	1	0
	<u>£2</u>	<u>1</u>	<u>0</u>

DONATIONS TO THE "PEOPLE'S EDITION" FUND 1876.

	£.	s.	d.
J. S. BUDGETT, Esq.	25	0	0
THE LORD BISHOP OF DURHAM	10	0	0
G. HARRIES, Esq. (2nd Don.)	10	0	0
F. W. P. LONG, Esq.	5	0	0
A. J. WOODHOUSE, Esq.	5	0	0
DR. F. BISSET HAWKINS, F.R.S.	2	0	0
MISS BECKWITH	1	1	0
Rev. F. N. OXENHAM.....	1	1	0
N. WHITLEY, Esq.	1	1	0
M.A.	1	0	0
S. SCOTT, Esq.....	0	10	6

£61 13 6

The following Balance Sheet was then read :—

ELEVENTH ANNUAL BALANCE SHEET, from 1st January to 31st December, 1876.

RECEIPTS.				EXPENDITURE.			
Subscriptions:—	£.	s.	d.		£.	s.	d.
4 Life Members ...	...	84	0 0	Printing	...	...	562 7 5
1 Member (Arrears) ...	...	16	16 0	Binding	...	...	11 16 10
14 Members, year 1875 ...	...	29	8 0	Reporting	...	...	35 14 0
292 " 1876 ...	...	613	4 0	Stationery	...	...	22 18 5
5 " 1877 ...	...	10	10 0	Postage ...	...	...	92 18 11
31 Entrance-fees ...	...	32	11 0	Advertising	...	...	42 11 3
3 Life Associates ...	...	31	10 0	Expenses of Meetings ...	...	...	25 15 6
1 Associate, 1873 ...	...	1	1 0	Rent to Christmas, 1876	...	...	158 2 6
3 Associates, 1874 ...	...	3	3 0	Salaries for Year, Clerks	...	...	52 10 0
19 " 1875 ...	...	19	19 0	" Extra Clerk	...	...	0 17 6
276 " 1876 ...	...	289	16 0	Rent for Clerk	...	...	1 0 0
5 " 1877 ...	...	5	5 0	Housekeeper ...	...	...	22 12 10
One Year's Dividend on £666 0 1:	1,137	3	0	Travelling Expenses	...	...	12 1 6
New 3 per Cent. Annuities	...	19	5 6	Coals ...	...	...	3 12 0
Donations to Library Fund ...	...	2	1 0	Gas and Oil	...	...	2 17 6
" People's Edition Fund	...	61	13 6	Insurance	...	...	0 12 0
Rev. W. F. Tremlett to Presentation Fund	...	5	0 0	Sundry Office Expenses	...	...	8 9 5
Sale of Journals, &c. ...	134	19	4	Presentation to Hon. Secretary*	...	...	222 3 0
				Bankers' Charges	...	...	0 8 2
				Investments £33. 8s. 6d. New 3 per Cent. Annuities	...	...	31 11 6
				Library, Books, Repairs, and Removing	...	...	34 16 8
				Balance in hand at Bank	...	...	0 3 5
							£1,360 2 4

We have examined the Balance Sheet with the Books and Vouchers, and find a Balance in hand of 3s. 5d.

G. CRAWFURD HARRISON, }
JOHN ALLEN, } Auditors.

* Acting Secretary, &c., since January, 1871.

** The arrears due December were above £84.

W. N. WEST, Treasurer.

[The Hon. Sec. having read the Annual Report, remarked that the "Flint Implement" controversy, which had been initiated at the great meeting of May, 1873, to which the Institute invited all leading English geologists (*Trans.*, vol. viii.), had since included an inquiry into the flints of Brixham Cavern, one result of which was that the flints discovered there were now properly classified at the Christy Museum. The Royal Society's report had been published, and many erroneous views and statements had been corrected, even some in Mr. Evans's celebrated work (*Trans.*, vol. xi.). As regards the bearing of this and other questions upon that of the antiquity of man, a remarkable conference had been held last month, at which the Chairman, Professor Evans, F.R.S., ex-President of the Geological Society, alluding to the geological evidence that had been gathered from time to time, mentioned that much was uncertain, and three words should be their watchword, "Caution, Caution, Caution."]

Rev. Professor WACE.—I have been asked to move the first resolution, "That the Report now read be adopted, printed, and circulated amongst the members." It must be extremely gratifying to us all to see that the Institute maintains its numbers in a manner which must be considered so satisfactory at the present time, because we find that, in spite of those events which have more or less affected all societies this year, the actual number of our members and associates has increased, and this is more, I think, than might reasonably have been expected. As the objects and nature of the Institute come to be more generally understood, I believe its prosperity will increase as regards, what I may call, its main object. So far as I know, it occupies a unique position in the country at the present time, its main object being to endeavour to vindicate for the Christian faith a direct interest and concern in every philosophical discovery of every kind that may be made, and therefore it brings Christianity and Philosophy into the closest possible contact at all points and at all times, and in this respect, so far as I know, it is the only Institution in the country—except the Universities, which have their own special educational work to perform—that vindicates for Christianity one of its greatest glories. There is a foolish, or rather an ignorant, notion abroad, that Christianity has been more or less opposed to human learning—a notion which is absolutely contrary to the most patent facts of history. A very remarkable circumstance in illustration of this is the very simple fact, familiar to every student of Church history, that the first great Christian writer after the Apostolic age—Justin Martyr—is also distinctively known as "the Philosopher." He is the philosopher and martyr, and the precedent which was set by that illustrious name was continued through the subsequent centuries of Christianity, until all learning was for a time submerged by a wave of barbaric invasion. But every great Christian divine and father of those early centuries was distinguished by his devotion to all human learning known at that time, and endeavoured to utilize it and to bring it within the sphere and control and illumination of Christianity. This Society, then, practically exists for the purpose, if I may so express it, of criticising all

philosophy and all science; and whenever any new discovery is brought to light, the members of this Society, like all thoughtful Christians, endeavour to realize what is its bearing upon the great truths of the Christian Revelation. It is not to be denied that there is a certain amount of danger in this process, and that some injury has occasionally been inflicted upon Christianity itself by undue haste, where persons have come to a rapid conclusion that such and such new philosophical theories are incompatible with the doctrines of the Christian faith, and have set themselves in undue antagonism to them. But this is a necessary disadvantage of the imperfection of the human mind when applied to these great subjects. In the language of an American writer, such errors are due, not to want of care, but to want of infallibility, and the only way to remedy them is that which this Society provides—by presenting an arena for perfectly open discussion; and I find that the rules of the Society are so wide that any Christian interested in the bearing of any philosophical question upon the Christian faith can have his views upon that subject expressed here; and thus all the bearings of a new truth upon the Christian faith would be brought out. This, then, is a great service which we render, and, as I have endeavoured to remind you, it coincides with the greatest and most honourable characteristics of the Church in all ages. It should be our object to second the efforts which have been made by the Council and officers of the Society, and to extend the knowledge of the objects and principles of the Institute; and I trust that the encouragement which we have hitherto received may induce all to do so more effectually in the future. (Cheers.)

Mr. W. VANNER.—I am sure the Report needs no words of mine to support it. I have great pleasure in seconding the resolution.

The resolution was then agreed to.

Rev. J. JAMES.—I beg to move: "That the thanks of the members and associates be presented to the Council and honorary officers for their efficient conduct of the business of the Institute during the past year." If I may single out one officer of the Society who deserves our thanks, I would mention our Hon. Secretary (cheers), who especially deserves to be thanked for all he has done. If I may refer to the Report for a moment, I should like to call attention to a note which is attached to one of its pages. Speaking of the papers contained in our volumes of Transactions, that note says:—

"Some are purely scientific, such as, *e.g.*, the paper on the Isomorphism of Crystalline Bodies, and some take up those questions of Science or Philosophy which bear upon the truths revealed in Scripture,—these latter are taken up on account of the assaults made in the name of Science or Philosophy upon Revelation, and with a view to elucidating the Truth, and getting rid of such philosophic or scientific theories as might prove baseless: theological questions being naturally outside the Institute's objects, are left for other Societies and ministers of religion."

Questions of Philosophy and Science are brought before us with a view to our examining the data upon which theories are founded; for too often discoveries are made and theories are founded upon them, and too eagerly

accepted by others as facts; and the history of the various branches of Science contains many a tale of supposed facts which have proved to be myths, resting on theories founded on false data. I am sure that this Society quite realizes the words of Lord Shaftesbury, which have been repeated more than once by him, and which are to this effect, that this Society and the Church of Christ do not look with any harshness or reserve upon Science, but would go most heartily with men of science in all their searches, only they would have those men of science search more thoroughly and deeply and widely. There cannot be too thorough a search before you attempt to found any theory upon isolated facts.

Mr. CALLARD.—I have very great pleasure in rising to second this resolution, for personally I have found the advantage of having such an officer as your Secretary, especially in the amazing amount of pains which he takes in order that no inaccuracy shall creep into your Transactions, and that any one who speaks at your meetings, even if only for a few minutes, shall be correctly reported. I am sure that all who have ever spoken at our meetings must be thankful to Captain Petrie for the great care he has taken. I would also tread to some extent in the footsteps of the gentleman who moved this resolution, for I have had opportunities of observing the necessity of being very guarded as to how far we receive as facts what are stated to be facts in Science. With reference to the Brixham Cavern,* and to the flint implements, I know that many of those flints are thought to be extremely doubtful. But it has been said lately: "You need not talk about flints, for here is the bone of a man found beneath the glacial clay, and therefore man is pre-glacial." Now if any one in society six months ago had denied the truth of that statement he would have been thought very presumptuous; but the calm way in which this Society meets these cases and invites discussion upon them, without speaking angrily to the scientific men who in good faith have made these statements, has not been without its effect. It is because you deal with Science in this way that I think great good has come out of the Society's efforts. If we had dealt with Science in another way, by curbing, or attempting to curb, its authority, we should not have got on very well. But this Society has adopted another course. You give scientific men credit for truth, and having met them fairly, you get an amount of fairness from them in return, which at one time you did not get. You had an illustration of that at the meeting held at the latter end of last month—I mean the conference called to consider the state of the evidence with regard to the antiquity of man. I was present at that meeting, and it was a pleasure to me to hear Professor Boyd Dawkins withdraw that bone which had been supposed to be human; while Professor Buck, on whose authority it had been accepted, said that though he could not say yet that it might not be human, still there was so much uncertainty about it that he would not have any theory built upon it.

* The first paper of Vol. X. contains a full account of the Royal Society's report on this cavern, and the errors which it has corrected.—Ed.

Now the story of that bone has gone all over Europe and America, as a testimony to the antiquity of man; but when you have men like these calmly and nobly acknowledging that so much has been assumed in their statements and arguments, I think we may say that great good has been done, and it is such societies as this which have brought it about. Before the meeting closed, Professor Boyd Dawkins not only said that the bone was not human, but he gave reasons for believing it to be the fibia of a bear. I think that in the Geological Society, the Anthropological Society, and in all other scientific societies, we shall hear no more of the existence of man previous to the pre-glacial period, at all events until further evidence is brought forward.

The resolution was then agreed to.

The CHAIRMAN.—Upon this last resolution I will trouble you with a word of thanks. I have been pretty constant in my attendance at the meetings of the Council of the Institute, and I may, perhaps, respond for all those who are honoured with your confidence as holding office in the Institute. The labour we engage in is a labour of love, for we hold it to be the duty of every person who believes to contend for his faith; and certainly it is the duty of every member of this Institute to work as hard as he possibly can for the maintenance of the Institute and its very noble object. Our work is a labour of love, because we all enjoy these discussions, and the making of the necessary arrangements for them once a fortnight; and, indeed, we all feel much obliged to you for permitting us to be your officers, especially as you not only honour us with that permission, but are also pleased to express your confidence in our conduct. I am sure that, on behalf of my brother officers and myself, I may return to you our sincere thanks.

Mr. J. E. HOWARD, F.R.S., then read the following address:—

INFLUENCE OF TRUE AND FALSE PHILOSOPHY ON THE FORMATION OF CHARACTER.

Having been asked to deliver the Annual Address, I have resolved to bring before you some considerations resulting from a rather long and varied experience as to the diversified influence of True and False Philosophy in the formation of character; a subject worthy the attention of an Institute pledged "to investigate fully and impartially the most important questions of Philosophy and Science."

I shall put in my plea for the Christian faith, as the alone foundation on which to rear the superstructure of a truly useful education; and I shall distinguish between "Divine Philosophy," which is, indeed, as Milton has said, "a perpetual feast of nectared sweets," and the Secular Philosophy of the day, which is rather to be described as "love of error" than as "love of truth," and which is an unfailing source of interminable mischief.

The contest between the partisans of these two opposing philosophies must be regarded, by all reflecting minds, as a most serious one.

The prize contended for, though not likely to be gained by either party, is nothing less than the empire of the world ; for to whomsoever should fall the exclusive privilege of instructing the minds of the rising generation would belong the prerogative of guiding, and even dominating, those minds when once matured.

The position which I occupy is favourable to impartial examination of the claims of either party, and also to call forth my sympathy with both.

It has been considered expedient, that the Address should this year be delivered by a layman ; and in intrusting me in so far with the defence of those principles to which we are pledged, the council have shown that it is no question of ecclesiastical authority or of additional theology for which we are contending, but for Christianity itself.

This will become more evident when I explain that for two hundred years my ancestors belonged to a sect having no connection with any "Church," and that my present position is subsequent to and the result of my reception of the Faith itself.

I feel somewhat as the hero of the Indian poem,* who causes his chariot to be driven between the two opposing hosts on the eve of the great battle which is to decide the empire of the East. "He looked at both the armies, and beheld on either side none but grandsires, uncles, cousins, tutors, sons and brothers, near relations, or bosom friends ; and when he had gazed for a while and beheld such friends as these prepared for the fight, he was seized with extreme pity and compunction, and uttered his sorrow" to his celestial guide, who nerves him to the combat by a full display of mystical philosophy—a philosophy, let me observe, which is well worth the study of those who would comprehend the character of the Indian mind.

* The *Bhagvat-Gita*. — The presentation of this work to H.R.H. the Prince of Wales shows the estimation in which it is still held. Man consciously needs some philosophy which can support him under the difficulties of life and enable him to face death with fortitude. The courage of the ancient Britons was sustained by thoughts respecting their future destiny, of the same kind, perhaps even identical with, those displayed by Krishna before the mind of Arjoon in the very ancient poem alluded to. It is an episodical extract from the *Mahabharat*, which together with the four Vedas are the most authentic original scriptures of the religion of Brahma. So at least we are told by C. Wilkins, Esq., the translator and editor of the *Bhagvat-Gita* ; the copy in my possession bearing date the year 1785.

The skill of the author of this very ancient poem consists in bringing before us his hero involved in troubles, which practically prove too trying for unassisted human nature. He is ready to sacrifice the renown of his own fame, the glory of his house, and his impressions of duty (if such a term may be allowed), to weak and almost feminine sentiments of pity and compassion. This gives his supposed celestial friend the opportunity to strengthen his mind, by educating him in the whole compass of Hindoo philosophy. It is remarkable that all this is effected in connection with the knowledge of friendship and intimate communion with the *one supreme god* (Krishna), who promises eternal felicity to those only who worship him; a subordinate and temporary paradise being the sufficient recompense of those devoted to the lower manifestations of divinity.

The whole work, together with the remaining poems, of (supposed) divine inspiration, held sacred for ages past by the men of the East, are in so far an attestation of the need felt by mankind for religion, in the sense of trust in the friendly assistance of a Power superior to their own; in fact, that something beyond the help that Science can afford, or the self-reliance that Secular Education can impart, is needed by man in the midst of the sorrows and calamities of life. In contending for the claims of a better philosophy, and in seeking to establish the true knowledge of God, as alone adequate to the education of the human race, I am also conscious of the need of seeking wisdom and guidance from above. This philosophy sustains me whilst exposing myself to criticism, such as it is not the part of a wise man needlessly to court; nor yet to be thereby deterred from the prosecution of a truly worthy enterprise.

In some sense I find myself between the two camps, and that my sympathies are by no means all enlisted for one side of the hostile combatants. I would desire, therefore, to put in a plea for increased charity towards those whom, for convenience sake, I will call *Rationalists*, amongst whom may be found some who sincerely desire a more true knowledge of God than they at present possess.

In the first place, then, let it be remembered, that one of the chosen disciples of Christ was a *Rationalist*; * and that from whatever source the peculiar characteristics of his nature were derived, these did not in the least shut him out from the love of Christ. Thomas, the sceptic, was as near to his heart

* So Olshausen, quoted in Alford, *Greek Test.*, vol. i. p. 825 (3rd edit.).

as Matthew the publican (tax-gatherer), and much nearer (how much nearer!) than Judas, the disciple who had charge of the money. Now it is painful to those who have been necessarily brought into contact with scientific study, to be told that all men of science are infidels.

I freely grant that the tendency of this peculiar training of the mental faculties (if I may judge from more than fifty years' experience) is to produce, or to foster, exactly that state of mind in which we find this disciple; but I could wish (in order to illustrate the observations I shall make) that it were in my power to bring before your view the celebrated painting by Rubens, of the appearance of the risen Christ to his sceptical follower; and to bid you mark the wonderfully beautiful expression which this painter (not painter merely, but *poet*, ποιητής) has succeeded in throwing into the face of the Saviour. I had this privilege recently; and its remembrance mingles with my meditations as I write. But you will allow me to turn to the Scripture, for it is, after all, by the *words* of the truth of the Gospel, and not by sensible representation, that our faith is to be established. I find that the reproof of our Lord to Thomas is of the mildest and most loving character, and wholly different from the stern denunciation which wilful and obdurate hardness of heart drew from His blessed lips.

In the next place I remark that Christ does not meet the demand of Thomas as if it were unreasonable; but, on the contrary, offers to him at once the fullest demonstration of the *fact* of His resurrection, and of the identity of His Person. We see how the foreseeing wisdom of God could provide thus for the instruction of believers in all generations. The proof of ocular inspection is very strong, but there is more than this, for the Master says, Reach hither thy hand and *thrust it into my side*,—into the great gash from which all the remaining blood in that blessed body must surely have escaped. No question then of the certainty of death having taken place. This privilege of ascertaining by actual touch the reality of that wondrous risen life was not accorded to the unquestioning, *unreasoning* faith of Mary; neither did her confession rise to a loftier altitude than that of Rabboni, "My teacher, at whose feet I have so long sat." As regards Thomas, on the other hand, it has been well remarked, that his "*is the highest confession of faith* which had yet been made," and this drawn, be it observed, from the ranks of the *Rationalists*—Ὁ Κύριός μου καὶ ὁ Θεός μου—somewhat feebly rendered, "My Lord and my God!"

It will be observed that I totally disregard the gloss of a certain class of religionists. The simple narrative speaks for itself, and especially does it speak to the hearts of those who not having seen like Thomas, have yet become blessed in believing.

And how are they blessed? Surely that they have begun to know God with an ineffable knowledge. He has revealed Himself to them, not so much in His attributes, and not according to the grasp of their intellectual capacity—the finite never can comprehend the infinite—but according to His nature, for “God is Love.” Thus the foundation of Christian philosophy is laid rather in the heart than in the head. Those who believe His love, love Him in return; for by love only can love be comprehended and embraced.

What, then, did the Apostle do with this newly-found knowledge? Did he embody it in a string of merely intellectual propositions? Did he remove the scientific difficulties attending the question how life could animate a resurrection body? I judge not; I believe that with the zeal of a glowing heart of love this Apostle went forth, perhaps even as tradition points out, as far as to remote India, to bear witness to the risen Saviour, who had thus revealed Himself to him. He would show that “*God was in Christ, reconciling the world unto Himself, not imputing their trespasses unto them.*” The Holy Ghost giving power to his word, he would gain the hearts of men, and not simply their heads. He would instruct them in philosophy that would avail for their guidance amid the rocks and shoals of life, leading them to a haven of everlasting rest.

I plead that “all our things should be done with charity,”* more particularly the special work in which (if I understand it aright) the Victoria Institute is engaged. We must not forget that the mere removal of stumblingblocks, however desirable, will not give a paralyzed man the power to walk, and will not renew his exhausted energies. Charity should lead to the source of real strength.

We have to show that we are not ashamed of the Gospel of Christ, for *it is the power of God unto salvation to every one that believeth.* It is this that gives power to walk in the right way, to the freethinker as much as to the disciple of hereditary dogma. Difficulties may remain and prove a salutary discipline to the believer, but he is furnished with “hind’s feet,” to overleap all these obstacles, and to hasten home to

* Πάντα ὑμῶν ἐν ἀγάπῃ γινέσθω.—1 Cor. xvi. 14.

his Beloved. The beauties and the glories of the revelation afforded us in the sacred books, come out more fully the more we study them, especially in the originals; but there are many things yet on which we wish to gain instruction, and about which we are still profoundly ignorant. I scarcely expect to see the solution of all difficulties, or, as the Jews would have said, the untangling of all the knots. Christian philosophy does not rest on these obscurities, but on well-proven historical facts.

In the sketch above presented of the formation of the character of Thomas, I have touched upon some of the leading characteristics of Christian philosophy. In the first place, there is absolute certainty in the revealed knowledge of God,—a firm foundation on which to build Christian life. This certainty is presented to the world on such evidence as renders its rejection inexcusable, whilst it is confirmed to those who receive it, in a manner wholly ineffable and divine. Christ says, “I am the good shepherd, and know my sheep, and am known of mine, *as the Father knoweth me and as I know the Father*” (*καθὼς γινώσκει με ὁ πατήρ, καὶ ἡγὼ γινώσκω τὸν πατέρα*).*

In the next place, this knowledge is not of an *abstraction*, but of a *Person*.† Connected with this, is the very important fact that Christian philosophy presents us with a perfect pattern,‡ according to which it is expected that a Christian should walk; and, not only so, there is a power of transformation in this pattern rightly beheld, which moulds into the same image the character of the believer.§ In contrast with the character of faith, and personal trust and obedience, thus formed by the reception of the revelation which God has given us of Himself, let us examine the pretensions of philosophy to a knowledge of God, derived from her own resources; and the bearing which this spurious profession has on the formation of character.

It has been shown, in a recent paper communicated to this Institute, that “all the motions of which we have, or can have, any experience, are relative motions only. That relative motions might be turned into absolute, if the absolute motion of any one body, with reference to mere empty space, could be ascertained. *But this discovery is impossible.*”

* See Alford *in loco*.

† In the Indian poem the hero is overwhelmed by the display of the glories of the Almighty, but reassured when he resumes a human form, exclaiming, “Having beheld thy placid human shape I am again collected, my mind is no more disturbed, and I am once more returned to my natural state.”—Compare Keble’s *Poem for Quinquagesima Sunday*.

‡ 1 John i. v. 1–3.

§ 2 Cor. iii. 18.

It appears to me that the same truth holds good with reference to all our thoughts about Being and Existence. We must have the absolute knowledge of some one Being, as our stand-point from which to measure the relationships of other beings to this one Being, and as a standard with which to compare the relative proportions and qualities of other existences.

If, for example, we could comprehend the conservative principle of the operations of which we are conscious, and which has been termed by physicians the *vis medicatrix naturæ*, we might proceed in our reasoning, as starting from this point of ascertained knowledge, to assign the relative value to the manifestations of the same force in the lower animals; as in the lobster, which can reproduce its claw when occasion requires; whilst we, who are possessed of so much more brain-power, cannot even reproduce a little finger. We might then continue our inquiries as to the exact effect of the higher concentration of nerve-power in the brain. We might learn much of the secrets of nature in connection with what I may be permitted to call the living soul, and its modifications in transmission from generation to generation. We could solve all questions of "fixity of species" and of "unity of type," where all is at present uncertain speculation, or presumptuous dogmatism. But the fixed starting-point is wanting. We do not absolutely know ourselves!

But if this is the case in reference to our lower nature, how much more evident is it that we are destitute of all proper appreciation of our spiritual nature. We are forced to the conviction that there is a wide difference in this respect between ourselves and the animals with whom we associate. They look up to us as their supreme point of reference. We, on the contrary, have an irresistible tendency to look up to something superior to ourselves. And what is this Something? The Arabian chieftains tried to answer it in that celebrated discussion which took place in the land of Uz, over 3,000 years ago. The speeches were all very much to the point, giving a singular pre-eminence to this philosophical discussion; but the challenge of the Naamathite remained unanswered, and remains so to the present day:—"Canst thou by searching find out God? canst thou find out the Almighty unto perfection? as high as heaven; what canst thou do? deeper than hell; what canst thou know?"* When the narrative in-

* Job xi. 7, 8.

troduces to us the Lord as speaking out of the whirlwind, it is in the sense not of describing *Himself*, but *His works*; not so much revealing His own nature, as confounding the pride of man.

The fixed and certain knowledge of God was wanting to the Greek philosophers. This is well shewn by Justin Martyr in his Address to the Greeks; who also contends that Plato was prevented by fear of sharing the fate of Socrates from giving full utterance to the truth which he himself approved in the writings of Moses. Justin quotes a saying of Socrates which is remarkable enough in this aspect of things.* I translate it thus: "It is not easy to find the Father and Creator of all, neither is it safe to speak of Him, when found, to all mankind." This mental condition is very graphically described in the Platonic dialogues. Socrates is made to say that in his youth he was "wonderfully taken with what they call natural philosophy. It seemed to me," he says, "an admirable thing to know the cause of everything, why it is produced, and why it is destroyed, and why it exists. I was vastly curious about such inquiries as these: whether heat and moisture by fermentation give birth to animals, as some said; whether that by which we think be the blood, or air, or fire; or whether none of these, but the brain be the organ by which we have our sensations—hearing, seeing, smelling—and whether memory and opinion arise from these, and when these acquire fixity they become knowledge. And in the same way looking at the causes of destruction and at the phenomena of the earth and heavens, at last I appeared to myself to be as stupid at these matters as it is possible to be." In fact he had not Darwin's writings to guide him, or he would doubtless have extracted much information by his habit of asking questions, and expecting answers. "I see no difficulty in believing" would scarcely have afforded satisfaction to a mind of so much power and originality. Socrates could never have become a Darwinian.

* 'Ο πάντων δὲ αὐτῶν εὐτονώτερος πρὸς τοῦτο γενόμενος Σωκράτης, τὰ αὐτὰ ἡμῖν ἐνεκλήθη. Οἱ γὰρ ἔφασαν αὐτὸν καινὰ δαιμόνια εἰσφέρειν, καὶ οὐκ ἢ πόλις νομίζει θεοὺς, μὴ ἡγείσθαι αὐτόν. 'Ο δὲ δαίμονας μὲν τοὺς φαύλους, καὶ τοὺς πράξαντας ἃ ἔφασαν οἱ ποιηταί, ἐκβαλὼν τῆς πολιτείας, καὶ Ὅμηρον, καὶ τοὺς ἄλλους ποιητὰς παραιτεῖσθαι τοὺς ἀνθρώπους εἰδίδαξε, πρὸς Θεοῦ δὲ τοῦ ἀγνώστου αὐτοῖς διὰ λόγον ζητήσεως ἐπίγνωσιν προτρέπετο εἰπών· Τὸν δὲ Πατέρα καὶ Δημιουργὸν πάντων οὐδ' εὐρεῖν ῥάδιον, οὐδ' εὐρόντα εἰς πάντας εἰπεῖν ἀσφαλές.—*Justin Martyr's Apol. II. pro Christianis*, § xi.

We need not wonder that Socrates* was dissatisfied with such inquiries as these. He sought, he says, for some other line of speculation. And he happened to hear some one read from a book of Anaxagoras that Mind or Intelligence was what had ordered everything, and was the cause of everything. With this notion he was delighted.

But when he inquired further, "I was dashed down," he says, "from these lofty hopes, when, as I went on, I found that my author made no use of his 'Mind,' nor referred to it as the source of the arrangements of the world, but assigned as causes, airs, and ethers, and fluids, and the like. It seemed to me as if any one after saying that Socrates does all that he does in virtue of his *mind*, and then proceeding to assign the cause why I am sitting here, should say that my body is composed of bones and muscles; that the bones are solid and separate, and that the muscles can be contracted and extended, and are all enclosed in the flesh and skin; and that the bones, being jointed, can be drawn by the muscles, and that this is the reason why I am sitting here."

"And as if again he were to assign the like causes for the fact that I am now talking with you" (*i.e.* his friends on the day of his execution) "making the causes to be air, and voice, and hearing, and the like, and were not to mention the true cause—that the Athenians thought it best to condemn me, and that I thought it best to remain here and to suffer the sentence which they have pronounced. For most assuredly these bones and muscles would long ago have carried me to Megara, or to Bœotia, moved by my opinion of what was best, if I had not thought it more right and honourable to submit to the sentence pronounced by the State than to run away from it. To call such things *causes* is absurd. If indeed any one were to say that without having bones and muscles, and the like, I could not do what I wish, he would say truly; but that I do what I do *because* of these, and not because of my choice of what is best, would be a gross abuse of language.

"For there is a great difference between that which is *the cause* and that without which the cause would not produce its effect. And yet many men, groping in the dark, call this,† which is a mere condition, a *cause*. And hence one man surrounds the earth with a vortex which revolves while the earth is at rest; another puts a large bowl over the air; but they never attempt to show that it is best that it should be

* *The Platonic Dialogues*, Whewell, vol. i. pp. 412—416.

† [*E.g.* "Force," or "Laws of Nature."]

so. They do not place their universe upon this, the strong foundation, namely *the greatest good*, but seek for some Atlas stronger still, to bear it up upon his shoulders."

This "strong foundation," which Socrates vainly sought for, is realized in the Jewish scriptures, in the revelation which God makes of Himself to Moses, and through him to His favoured nation, "I am that I am." Which, according to the laws of the Hebrew language, is also, "I shall be that which I am," or "I am that which I shall be," or, as formulated in the name which we know not how to pronounce, but which we call Jehovah, $\delta \omega \nu \kappa \alpha \iota \delta \eta \nu \kappa \alpha \iota \delta \epsilon \rho \chi \acute{o} \mu \epsilon \nu \omicron \varsigma$, well rendered in French by *l'Eternel*.

We have, then, an eternal and unchangeable Being, in whom the Archetypal *ideas* are, so to speak, inherent. It is also essential to our conception of Him, that He has power to embody his *ideas* in creation, and to maintain them in existence when so embodied.

Thus speaks Sir Isaac Newton in his "creed," given us in the *Gentleman's Magazine*, in 1731:—"This Being governs all things, not as a soul of the world, but as Lord of the universe, and upon account of his Dominion, he is styled Lord God, supreme over all. The supreme God is an eternal, infinite, absolutely perfect Being. *But a Being, how perfect soever, without dominion is no Lord God.* The term God very frequently signifies Lord, but every lord is not God. The dominion of a spiritual Being constitutes him God; true dominion, true God; supreme dominion, supreme God; imaginary dominion, imaginary God.* He is not eternity, and infinity, but eternal and infinite. He is not duration and space, but has duration of existence, and is present; by existing always and everywhere He constitutes duration and space, eternity and infinity. Since every part of space and every individual moment of duration is everywhere certainty, the maker and Lord of all things cannot be said to be in no time, and in no space. He is omnipresent, not by His power only, but in His very substance, for *power cannot subsist without substance*. God is not at all affected by the motions of bodies, neither do they find any resistance from his Omnipresence. He necessarily exists, and by the same necessity He exists always and everywhere. Whence also it follows, that He is all similar—all eye—all ear—all brain—all arm—all sensation—all understanding—all active power; but this not in a human

* [*E. g. Darwin's Natural Selection.*]

or corporeal, but in a manner wholly unknown to us, therefore not to be worshipped under any corporeal representation."

This whole truth seems to be embodied in the declaration of Christ. "God is a Spirit; and they that worship Him, must worship Him in spirit and in truth."

Πνεῦμα ὁ θεός, God is *Spirit*, not, I presume, a Spirit, but absolutely *the* Spirit; which truth removes the knowledge of His essence from all cognizance of our senses, and consequently from all scientific inquiry.

I have said that the Greeks had no exact knowledge of God; but there is a certain sense in which they and all mankind are responsible in this matter, "for the invisible things of Him from the creation of the world are clearly seen, being understood by the things that are made, even His eternal power and Godhead, so that they are without excuse." If men choose to assume a bestial character, and to put away this knowledge from them* (τὴν ἀλήθειαν ἐν ἀδικίᾳ κατεχόντων), they do so at their own responsibility, and in the exercise of their own free will.

At the same time, as we are instructed in the celebrated speech of the Apostle at Athens, men are so set in this world as that they should seek the Lord, if haply they might *feel after Him*, and find Him. The word ψηλαφήσειαν exactly describes the "groping like a blind man, or in the dark"† which results in worshipping, after all, "an *Unknown God*," though He be not far from every one of us, for we are also His offspring; and the darkness in which we find ourselves arises from the condition of our own hearts.

To this condition both of mind and heart I can revert with much appreciation and sympathy. I look back with no regret to the somewhat austere discipline of my youth, and to the innumerable hours of enforced silent meditation required by my then religion; which, together with its outward indications, was relinquished when I found something better. It appears that Justin Martyr did not lay aside his philosopher's cloak when he became a Christian; and it is not difficult in studying his writings to find that his Christian philosophy, though it enabled him to die manfully for the faith, was less ritualistic, less mixed up with Judaism, and certainly more simple and more philosophical, than that of some of his successors.

My education has, I find, in like manner indisposed me to some prevalent views, and has predisposed me to sympathize with those who are under the teaching of the philosophy of

* Rom. ch. i.

† See Liddell and Scott, *Lex. in loco*.

the East; I also compassionate those Rationalists who are repelled, by manifest error in popular Christianity, from the teaching of Christ and His Apostles.

If any one has fathomed the depths of mystical philosophy as presented to us, for instance, by the Archbishop of Cambridge, or that more able expositress of the mysteries of pure love, the amiable and devout Madame Guion, he will understand that silence does oftentimes teach more than words can eloquently express; and such will be prepared to appreciate all that in Buddhism is so imperfectly apprehended, and which appears so incomprehensible to the shallow "thinkers," whether of the German or the English school, and they may perhaps agree with me, that but few of these have even waded knee-deep into the great ocean of profundity; much less have they lost themselves in Nirvāna.

In the assembly in which the great "Apologist"* of the religion of my education was convinced of "the truth" nothing was spoken but these three sentences:—

"In Stillness there is fulness.

"In Fulness there is nothingness.

"In Nothingness there is all things!"

This, I take it, is pure Buddhism, and these apothegms certainly defy all attempts at explanation by words. Speech in this case may be silvern, but silence is golden!

Instead of raising a smile, these ought to be regarded as the entrance into the vestibule of the solemn old temple of mystical philosophy; a philosophy which I have forsaken, and which I account a failure, but which nevertheless presents us with some pleasing *flowers*, if the *fruits* are not altogether such as are those of Christian faith.

This most ancient religion of Buddhism, as we have recently been taught, is more full of promise than any other of the forms of false religion. But when brought into contrast with Christian philosophy, it fails entirely in all the principal points I have noticed. It is ignorant of God. "Inasmuch as Buddhism declares *Karma* to be the supreme controlling power of

* Robert Barclay was born in the year 1664, of a good family, in Scotland. He was sent to France for education, and became much imbued with the tenets of the Roman Catholic faith. On his return home he found that his father had embraced the views of the "Friends," and his attendance on their meetings followed. "One of his most intimate friends asserted that he was *reached* in the time of silence." In J. Barclay's *Jaffray and the Friends of Scotland*, 2nd edit., p. 271, will be found "*those few words*, attributed to some minister who was present at the first meeting Robert Barclay attended, and which are said to have had considerable effect on his mind." His *Apology for the true Christian Divinity* is dated 1675.

the universe, it is an atheistic system. It ignores the *existence of an intelligent and personal Deity*. It acknowledges that there is a moral government of the world; but it honours the statute-book instead of the lawgiver; and adores the sceptre instead of the king." If I am asked to explain *Karma*, I must decline, for "no one but a Buddha can tell how *Karma* operates, or how the chain of existence commenced. It is as vain to ask in what part of a tree the fruit exists before the blossom is put forth, as to ask for the locality of *Karma*."*

The cleaving to existing objects is *upádána*; and this at all events is intelligible. As it is the grand tenet of Buddhism that all existence is an evil, it thus becomes consistent with right reason to seek the destruction of *upádána*, which alone can secure the reception of *nirvána*, or the cessation of being.

It would seem to English minds that the deduction from this proposition is that death is better than life, but this is as far as possible from the meaning. Death does not destroy the *Karma*, nor prevent the rewards and punishments being felt in a future life or lives. Death is not *nirvána*.

It may be said that all this is very inconsistent with the renunciation of the idea of a personal God. It appears so, but it must be remembered that the same Buddhist who renounces the personality of God, disbelieves also in his own personality. The *Ego* is not *one person*, but the expression of a *Karma*, and this is unchanged by death—a truth much to be borne in mind!

Buddhism is not, then, the gospel of suicide. The unenviable distinction of promulgating this last effort of the powers of darkness has been reserved for some advanced German "thinkers"; even as the gospel of immorality is the speciality of some of our more practical English, some of whom have done themselves no credit by their most recent lucubrations on these subjects.

I think the philosophy of Buddha worthy of much more careful examination than has yet been given to it by the Institute. Its influence on the formation of character is the alone aspect which I dwell upon in this Address. The view which it presents to us of the misery of creation, the denial of the very Being and existence of God, as well as of the creative power and goodness of the infinite Nothing which

* Hurdy, *Manual of Buddhism*, p. 392. IX. *The Ontology of Buddhism*. Karma is, however, defined by Krishna, the Supreme God in the Hindoo poem, as "that emanation from which proceedeth the generation of natural beings"; but this is not Buddhism.

takes His place, marks out its origin as from beneath—welling up like the bitumen from the bottom of the Dead Sea. Nevertheless, it aims at being a highly moral religion.* The favourable side of the influence of Buddhism has been sufficiently presented to the Institute.

The influence of the philosophy of the Hindoo sacred writings must be appreciably different. It is evidently at once hardening and corrupting. The devotee has *no* fixed rule of morality. He is exhorted to disregard the consequences of his actions, and to preserve a sublime indifference, even considering the actions of his body as fixed by fate, and for which he is in no sense responsible.

My argument as to the necessity of Christian philosophy for the formation of character might be greatly strengthened by the contemplation of the practical results of Mahometanism; which has no philosophy but that of fate, and has no favourable feature except, in some sense, what I may call its corrupted Judaism.

Let us now consider, in the light of the experience of mankind, as far as I have been able to gather it up in this brief

* The ten obligations binding on the priests forbid,—

1. The taking of life.
2. The taking of that which is not given.
3. [Prohibits the continuance of the species.]
4. The saying of that which is not true.
5. The use of intoxicating drinks.
6. The eating of solid food after mid-day.
7. Attendance upon dancing, music, and masks.
8. The adorning of the body with flowers and the use of perfumes and unguents.
9. The use of seats or couches above the prescribed height.
10. The receiving of gold or silver.

I have not space to give any account of the degree to which its precepts are obeyed, although I have in my possession details which might illustrate the subject. "The first four are called the *panchasil*. They are repeated by some persons every day at the *pansal*, especially by the women" (Hardy's *Buddhism*, p. 488). Thus we have an attestation, on the part of a vast multitude of mankind, of the importance of a *fixed standard of morality*. Of this our philosophers who reject the Ten Commandments of Scripture are entirely destitute. These precepts of Buddha, binding on the priests (though not *always* observed by them), may also be kept in their degrees by the laics: 1. They may be kept inadvertently without any intention of acquiring merit thereby. 2. They may be kept at the recommendation of another, or to please another. 3. They may be kept *from free choice*, from having seen their excellence or advantage.

This last is the way to obtain real merit, for "he who would attain to Nirvāna *must not trust to others*, but exercise heroically and perseveringly *his own judgment*." This is the advice said to have been given by Buddha.

and necessarily fragmentary and imperfect survey, what is likely to be the effect of the substitution of secular for religious education, of scientific training for traditional belief.

Christian philosophy is the only ground on which we can rest for the firm inculcation and the steadfast practice of the love of truth. And yet, the importance of this state of mind cannot be overlooked. Even Buddhism commends "truthfulness of speech, that which avoids the utterance of that which is untrue, and seeks to utter the truth, like the husbandman who, by the act of winnowing, drives away the chaff while he retains the grain."*

But secular philosophy can afford us no guarantee for this in its teachers. Even the celebrated Galileo could not find in himself the power to adhere to his knowledge, and denied the truth that he knew; though he afterwards could not help re-asserting it. Those who have characters to maintain may be trusted to show us the truth they discover, at all events under ordinary circumstances; but it is otherwise with those who do not come before their fellow-men except as anonymous writers; and who may have the strongest possible interest in disguising the truth, in suppressing what is opposed to their favourite theories, or in warping and modifying the facts which they do present to their readers.

To separate the chaff from the wheat cannot be expected from such teachers, whose passions and prejudices are enlisted on the side of retaining the chaff rather than the wheat. Let me explain more clearly. It is a common and a fatal mistake to confound science with philosophy, to attach importance to the hypothesis which we find it necessary to assume equal to that of fixed and proven science. The scaffolding we employ in rearing a building *may* be found so defective that it must be arranged anew; and, under any circumstances, it is of temporary and transitory utility—it is not the building itself.

The Buddhist philosophers (in comparison with whom our modern atheists are but children) declare (on the authority of Gotama Buddha) that "*all beings exist from some cause, but the cause of being cannot be discovered.*"

We think we know better, and we form hypotheses to account for the origin of being by evolution or otherwise. These hypotheses, one after another, prove to be founded on nothing solid. They disappear, to make room for others in endless succession; but whatever benefit they may meantime yield by increasing the activity of research, they are not

* Hardy's *Buddhism*, p. 417.

science, but *philosophy*. They are not the pure grain, but the husk cleaving to it; and all experience shows that bigotry, and all the bad passions of man, cleave not to the certain and undeniable, but to the apocryphal and uncertain, whether in science or religion. So that, in the end, our teachers of science may prove teachers of science *falsely so called*; and, through their opposition to the dogmatic teaching of religion, those who are committed to their charge may be shipwrecked at the outset of the voyage of life.

This would seem to be the very object of some of our "scientists," who even hang out false lights, as the wreckers on our coast did of old, to lure the vessel on to her destruction. Falsehood is as welcome as truth, if only the too credulous public may be prejudiced against revelation. One recent instance may suffice. I noticed in one of our scientific journals an attack on the account of the creation of man in Genesis, showing that Moses was entirely mistaken in describing man as formed out of *clay*, seeing that clay (alumina) does not enter into his composition. This was a false light calculated to mislead the unwary. The simplest Sunday scholar may see that Genesis never says anything of the kind. "Jehovah Elohim formed man out of the *dust of the ground*"; 'āphar (אֶפְרָא) implies neither clay nor alumina in a chemical sense, but simply the earthly materials out of which the atomic structure of a man's body is built up. The word is used about a hundred times in Scripture, and never in the sense of clay; but, on the other hand, it is said all are of the *dust*, and shall turn to *dust* again; a very simple fact, which the process of cremation would make manifest to the most sceptical scientist; or interment in quicklime, changing *water* into *dust* (hydrate of lime), would still further demonstrate.

Of course I esteem it too great nicety of expression to object to the term *clay* as used in common language, and in the poetical diction of Job; but in Genesis the Scriptural expression of *the fact*, however explained, is, that God formed man out of *the dust* of the earth.

I am reminded of this evidence of the *animus*, not of science, be it observed, but of "Scientists," by what I read in a recent address in Paris of the great "father" Hyacinthe Loyson, to the effect that "it mattered little, after all, whether we have had for an ancestor a monkey—when Genesis gives us an ancestor more vile still—the slime (*limon*) of the earth." In an address on "*Le respect de la vérité*," it would have been better to verify the quotation from Scripture, for Genesis does *not* give us *as an ancestor* "the mud of the

earth," but expressly shows that we are "*the offspring of God.*" The account of the creation of Adam is given in Genesis as a *fact*. If not a fact, it must be a *fiction*.

But let the talented "father" choose which. He cannot combat on both sides. He does not himself believe in Darwin's theory, and to attempt a compromise is to mingle in the tumult of discordant voices described by Dante as filling an atmosphere * of no definite shade of colour, but obscure, like a London fog.† Here are collected on the banks of the Styx the souls of those who lived in the world in a state of neutrality and compromise; and they have for their companions the angels who were neither faithful to God, nor yet rebellious against Him. The position is described as one of such extreme discomfort that they would willingly change it for any other lot.‡

The highly popular orator to whom I allude will pardon me for saying that I should be sorry to see even a tendency in this direction, either in his case or in that of others, whom these remarks may concern.

"Fama di loro il mondo esser non lassa,
Misericordia e giustizia gli sdegna,
Non ragioniam di lor, ma guarda e passa."

In the Utopia, in which alone I shall ever desire to become an active citizen, I should seek the enactment of stringent regulations, to the effect that *no public instructor should be allowed to teach anything that he does not know*. The man of science should explain facts, and give us the theories necessary to bind the facts together, and to *give them* their logical import; but he must distinguish between what is proven and what is unproven. If he goes beyond his ordinary province and ventures on philosophy, he should do so under peril of having his claims to the fair title of philosopher subjected to the searching of such courts of equity as we have here in England. If he cannot do this, and if he fail to describe and to make manifest to all, his perfect familiarity with and knowledge of that portion of "*the infinite azure*" which he claims as peculiarly his own, he should be adjudged by a jury of his countrymen a spurious claimant, and treated accordingly.

I should also endeavour to avoid the practical inconvenience

* "*Senza tempo tinta.*"

† "*Come l'arena quando 'l turbo spira.*"

‡ "*Che invidiose son d'ogni altra sorte.*"

which, at all events in the education of the young, attends upon the working of a really scientific mind. Such a mind would find the necessity of holding even that which seems proven, in some sense in a state of uncertainty, admitting the possibility of the whole ground having to be gone over again, resulting in the subject being viewed in some new and perhaps truer light. I am no astronomer, but I inquire of one who truly is such, the exact distance of the sun from the earth. The astronomer gives me an immense amount of most valuable and correct information, but the dogmatic reply is not forthcoming. What then have I to teach my children? Of course I cannot send them to the great astronomer, but am fain to let them take their chance of instruction from those who are the more fitted for the office of teacher by cherishing no doubts on the subject.

In the practical application of scientific research, I have always found that facile belief in authority is the characteristic of feeble minds, and that in mastering any subject, it is necessary to begin *ab ovo*, and to prove the ground step by step, without relying too implicitly on the information given by those who have preceded in the path.

But what would be the effect of such teaching on the masses of mankind?

It seems to me a great misfortune that science should ever have sullied her fair fame by attempts to soar into regions of philosophy. She thus incurs the blame of being an enemy to religion, and disqualifies herself from the task of instructing the rising generation.

If science had limited herself to her own department, her title to the good office of expanding the mind might have been generally admitted. But when we have the claims of science set forth as if she really could educate the heart, the common sense of mankind instinctively revolts from the presumption involved in these dogmatic assertions of her advocates.

In order to bring this Address to a profitable conclusion, I am compelled to draw on the resources of my own experience.

Most especially, then, I must say that a more cheerful and a far more Scriptural view of Christian life and duty has very extensively driven away the clouds of puritanical gloom which had settled down in what was in my youth called the "serious" part of the Christian world. As I was (though not religious) *naturally* "serious," I never could see this to be the proper definition of the *believing* portion of mankind, who have more right to be called the "cheerful" section.

I may have my thoughts about the possibility of an extreme in the opposite direction, but, in the mean time, am thankful that the age above alluded to has passed away, since untold mischief has resulted from the attempt to imprison young minds in its embrace.

I never approved of this course, but rather of the endeavour to win the citadel of *the heart*, and to gain over the garrison there to the side of truth and right principle. Still judging from my own experience, I know no way to open the gates of this citadel other than the way of *love*.

*First** Christian faith, and *then* liberal education to the fullest extent, is that adjustment of the claims of secular and religious education which alone can meet the real need of the rising generation, and which parents, at any rate, can adopt, whatever difficulties may be experienced in a wider sphere of application.

The *heart* being first regarded, I hold that the *head* should be well furnished likewise, and, to the best of my ability, would advocate this principle also, both with respect of scientific and of literary instruction.

This may seem a trite observation, but it is nevertheless one which I may be permitted to bring into prominence. For there is amongst many well-intentioned people a great jealousy of science, and consequently of scientific teaching. They forget that the young mind thirsts after information, and that if the prospect of legitimate gratification be excluded, and the desire for it constituted a *malum prohibitum*, if not a *malum in se*, they will probably burst through all restraint to eat of the forbidden fruit for themselves.

What, then, is the effect of the teaching of science? Surely if *science* be indeed *scientia*, knowledge, the effect must be good. Has it not been said of old time, and does not all experience confirm the saying, that "for the soul to be without knowledge is not good"?

My father† instructed me, to the best of his ability, in the knowledge of scientific facts, and sought to impart those habits of observation of the phenomena of nature, whether of the earth or sky, which proved a fund of enjoyment to himself

* See an inscription in this city, "*now seldom pored on*," obscured somewhat, but still legible, and remaining as an attestation of the views of our forefathers: SCHOLA CATECHIZATIONIS PVERORVM IN CHRISTI OPT. MAX. FIDE ET BONIS LITERIS.

† Luke Howard, F.R.S., Author of *Essay on the Modification of Clouds*, *The Climate of London*, &c.

even in extreme old age. I owe his memory hearty thanks that he trained me to think and to observe—in a mundane sphere, it is true; but the observation of and delight in this present creation hindered neither him nor me from becoming acquainted with a higher creation, and with a more abiding spring of consolation.

I plead, therefore (whilst deprecating compromise with error), for continued and increasing interest in the work of the Victoria Institute, in as far as it upholds Christian Philosophy.

Those who embrace this philosophy are happy in that which they *know*, for “they know in whom they have believed; and that He is able to keep that which they have committed unto Him against that day,” so that they can view without dismay the approaching storm which is about apparently to beat with increasing violence on the good ship, for the safety of which the Captain is understood to have engaged His word. I seem to see much of the cargo encumbering the decks, the accumulation of successive generations for well-nigh eighteen centuries—choice rarities of many pagan lands—swept overboard by the fury of the tempest, and in the meantime the good mariners almost ready to say, “Master, we perish!” yet taking fresh courage by His assurance, “Be of good cheer, for I have overcome the world!”

In conclusion, I would place before you the following estimate of Spurious Philosophy by one who had full opportunity of deciding on its merits, and chose for himself a better path, which has now led him to a fairer inheritance.

“Meanwhile, what means that laurel on the brow
Of fair philosophy? Has she achieved
Illustrious deeds, and in the realms of thought
Made lasting conquests? From the ancient days
When that Phœnician who first bore the name
Of sage,* and left the busy ways of men,
Their noise and fickleness, for Nature’s book
Of solemn laws, to meditate therein,
And found the general origin of things
In the moist element the first and last,—
Down to our age of transcendental terms
And ‘*Understanding’s*’ German categories,

* Thales.

What truths have we obtained ? what golden ore
 Of certainty—to weigh the balance down
 With priceless value ? Look around and see
 How still they wander in the labyrinth,
 In the old mazes, jaded and perplexed
 With puzzling tracks, which bring them round again
 To paths already tried—and no escape !
 Or mark them working hard at Time and Space,
 Substance, Causality, the External World,
 Ego and Non-Ego—the Absolute
 Being and Non-Being—‘ A priori ’ grounds
 Of synthesis,—Abstraction pure, and store
 Of subjects—Accident, Phenomena :
 With these they build a crazy bridge, to span
 The dark, deep chasm, yawning wide between
 ‘ Thought Absolute ’—and on the other side
 ‘ Absolute Being ’—and essay to cross
 With all their company, and all their weight
 Of words—a ponderous baggage—so to reach
Ontology, who sits enthroned in mist,
 The hazy ruler of the opposite coast.
 But scarce their feet have pressed the middle beam
 When the false fabric cracks, and prone is hurled
 A hideous ruin ; headlong, too, fall they
 With all their dogmas rattling round their ears,
 And seized by whirlpools, underneath are rolled
 In rapids far away, to sink in depths
 Of dark Nonentity and Unbelief.”

By R. M. BEVERLEY, M.A.

Mr. J. BATEMAN, F.R.S.—I have much pleasure in moving a vote of thanks to Mr. Howard for his most able, interesting, and varied Address, to which I am sure you all listened with very great pleasure. I do not know, Sir, where I should go to hear a better address; but I do know that at the Victoria Institute I can sometimes hear one as good. Holding, as I do, a very high opinion of the value of this Institute, I am glad to find that it is appreciated not only in the three kingdoms, but in other and far more distant portions of her Majesty’s vast empire. It was only the other day that I received a letter from India, from one of my sons, who is a missionary there, in which he requested that two of his friends might have an honour on which they had set their hearts—that of being elected members of the Victoria Institute. This is only one of many illustrations of an appreciation of this Institute having penetrated into very distant parts. And here I may, perhaps, also mention,

without offence, a little incident connected with your indefatigable secretary, to whom I am indebted for a hint upon which I have now acted. I received from him a few days ago a letter, saying that he hoped I would say something this evening. In consenting, I added that I was undecided as to a subject to comment upon, and communicated to him that letter from my Indian friends, asking him to take the necessary steps. Next morning I was somewhat surprised to receive my Indian letter back again; but with it I found one suggesting that the letter seemed most opportunely to afford a subject for remark. I have now great pleasure in moving that the thanks of this meeting be given to Mr. Howard for his most admirable address. (Cheers.)

Mr. H. CADMAN JONES.—I have much pleasure in seconding the resolution. Although a comparatively idle member myself, never having read a paper before the Institute, yet I am very much obliged to those who do labour in our interests.

The resolution was then unanimously agreed to.

Mr. HOWARD.—I thank you very much for your patience in listening to an address on a subject which, although treated rather seriously, could not have been dealt with otherwise than in the light of my own experience; and I have done this in the hope that it might be useful to others.

Rev. Prebendary IRONS, D.D.—I am glad to have the honour of moving a vote of thanks to you, Sir, for your services as Chairman to-night, and, I am justified in adding, for the great service you have rendered to the Institute ever since its foundation. We are all grateful to you for having endeavoured to preserve throughout the real character of this Institute. Your papers have been philosophical, but they have not been put forward in advocacy of any special aspect of Christianity. We recognize very strongly that though you had views of your own and did not attempt to conceal them, you did not give them that undue prominence which, in this Institute, would be wholly unfair to others. Now, that I apprehend to be our duty. We feel as members, and particularly as philosophers, that we should do much harm to the Institute if we allowed it to be thought that we met here in a spirit of antagonism to science. Undoubtedly our object is to ascertain the truth, whatever that truth may be. We accept it, not reluctantly, but cheerfully and thankfully. We love it because it is the truth; and if, for the time being, it seems to clash with what we thought to be our Christianity, we are willing, either to wait until we know better, or, perhaps, to doubt whether our notion of Christianity may not have some flaw in it. Unless we meet in that spirit of entire fairness, we shall not be able to hold together. We are all aware that in this Institute there is a vast variety of Christian opinion. It would be entirely wrong to conceal the fact, that we are all here on a philosophical and scientific basis common to us all, and that we are not here to fight for any

particular aspect of Christianity. There are many, I do not know how many, different forms of the Christian religion to be found among our members, but I am sure that there is a sufficient variety of Christianity among us to justify what I am saying. I am sure we shall all feel that the Council have done us good service in keeping us as far as possible from becoming a mere religious debating society. That is the very last thing we should wish to be. (Cheers.) We can respect one another here without going into the details of individual opinion. I acknowledge that from time to time I have heard assumptions and sometimes statements and arguments of a religious character here, and I have taken part in them myself; but I have no doubt that my brother members, who have done exactly the same, have patience with me as I have with them; and it is only in that spirit that we can at all hold together as a scientific and philosophical society. There are other societies which are engaged in the defence of the evidences of the Christian religion. I am not a member of any of these societies, though I have sometimes been asked to be; for I do not think Christianity needs any defence at all. I think it is strong enough to hold its own; and if it were not so, I should be sorry for it as a Divine Revelation. But I think there is very great need that we should constantly watch the progress of all knowledge around us of a scientific kind, in order that the contrary aspects of science may not be found to be a hindrance to young minds, which may thereby be hopelessly injured in their education, and especially in the early periods of it, by accepting for *scientific truth* that which we know is frequently founded, after all, on *scientific error*. The examples which have been mentioned this evening are sufficient to make us feel that there is abundant need, and always will be, of an institution to cherish, and at the same time to watch, Science, so that it may not have a dangerous effect on the morals and religion of those who are beginners. For instance, the subject which has been referred to of the supposed immense antiquity of man, is at this time undergoing a new examination, with results entirely opposed to those which, a few months ago, were supposed to be scientific conclusions. We must recollect that science is incomplete. A few years ago there was a great stir made about a book called *Essays and Reviews*, and there was one scientific essay, the main features of which are not considered to be scientific now. This exhibits what is not a proper attitude of mind. Professor Huxley and some others should understand that we are not here as the antagonists of science, but simply as asking them not to be the antagonists of moral and religious truth, to which they have not given sufficient attention. Let them be fair; they may be quite sure of our fairness. If our papers diverge on to the theological track, our Council will be on their guard to keep them from straying, or from opening up an arena of discussions or debates on religious points, which in this room must be regarded as open questions. With these remarks I have to propose that the thanks of this meeting be given to you, Sir, for your kind and able conduct in the chair.

Rev. J. W. BUCKLEY.—I have much pleasure in seconding this resolution.

I have attended many of the meetings when you, sir, have been in the chair, and I know that you have done us great services. In one point of view the office of Chairman is not an easy one, for speakers sometimes fail; but when you have been Chairman I have noticed that, when others have not spoken, you generally threw yourself into the gap. Again, you always insist on keeping us to the point of the discussions. Very often—and I must plead guilty to this myself—we are apt to digress, or fix only upon some particular point of the subject not very closely connected with its main issues, and you then very properly call us to the main question. It affords me very great pleasure to second this resolution.

The resolution was then carried with applause.

The CHAIRMAN.—Lord Shaftesbury, the President of the Institute, is not often able to be amongst us, but when we have the pleasure of seeing him here, that pleasure dwells long in our minds. We know not only his benevolence and fondness for good, but he has that tact of the real English nobleman—though I am happy to say that it is not confined to them—of saying exactly the right thing at the right moment. I have been much pleased at hearing him say just the very thing we wanted to hear. A great part of your thanks really goes to our noble President, but several expressions have been uttered which are so personal to myself that it is impossible for me to transfer them to another. I feel that those remarks of Dr. Irons and Mr. Buckley are something like the second half of a return ticket, stamped with the very legible expression, “not transferable.” (Laughter.) The point which Dr. Irons brought out most especially as a reason for thanking me is that I have always endeavoured to keep polemics out of the Society. It is satisfactory to find one’s work recognized. I have always desired and intended, so far as I could take part in its affairs, that the Institute should be a scientific institute, and not a society for discussing differences in matters of religion; and I rejoice in the thought that this Institute has been the means of saving a great waste of power. We Christians, unhappily, occupy a great deal of our strength and time in contending with one another. I suppose it cannot be helped; and that there must be a great deal of controversy even among those who hold the same fundamental truths in matters of religion; but there are times, places, and occasions when and where controversy must bring about a great waste of power, which it would be better to prevent. Now, all Christians have a common interest in the Holy Scriptures. If those Scriptures are attacked, not one school of thought alone is wounded, but every one receives a wound, and therefore we are all equally interested in defending the Holy Bible. Therefore, I am glad to think that we have here a society in which persons differing on other points can meet together and fight together, shoulder to shoulder, for that book which is their common inheritance and their common faith, in the face of the enemy. Here, then, we must not contend with each other, but we must all pull together. On the other hand, I am glad to find it laid down that we are a scientific society, and not a society

opposed to science. As a matter of fact, we are intensely scientific; and all we want is that science should go deeper than it has ever done before. For my own humble efforts, I must say, as I have said before, that they have been given as a labour of love. I am reminded by Captain Petrie that, owing to the vacancies caused by death, he and I are the only two members of the Institute who remain from the original organizing committee which was appointed by the founders of the Institute to draw up its objects and rules. I think that he, at all events, has certainly fought manfully to carry out these objects, and to keep the Institute close to its own rules.

[The Annual Meeting being concluded, the Members, Associates, and their friends assembled in the Museum of the Society of Arts, where refreshments were served.]

ORDINARY MEETING, DECEMBER 3, 1877.

C. BROOKE, Esq., M.D., F.R.S., VICE-PRESIDENT, IN THE
CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following elections were announced :—

HON. FOREIGN CORRESPONDING MEMBER :—Professor Oswald Heer, D.D.,
Professor of Botany, University of Zurich.

HON. LOCAL SECRETARY :—Rev. W. H. Dallinger, F.R.M.S., Liverpool

MEMBERS :— J. Thornhill Harrison, Esq., M.I.C.E., F.G.S., Ealing ; E.
N. Nunn, Esq., M.A., LL.D., Weston-super-Mare ; W. Pearce, Esq.,
London ; A. Reith, Esq., M.D., M.R.C.S., Aberdeen ; Peter Spence,
Esq., Manchester ; Rev. R. K. Eccles, M.D., Dublin.

ASSOCIATES :—A. D. Anderson, Esq., Argyllshire ; T. Gordon Bowman,
Esq., London ; J. Porter Corry, Esq., M.P., Ireland ; Captain F.
Corkran, 37th Regt. ; J. S. Crisp, Esq., F.R.M.S., London ; Colonel J.
Crofton, Royal Engineers ; J. E. Green, Esq., F.R.G.S., London ; T.
Worthington, Esq., B.A., T.C.D., Manila ; Rev. J. R. Baldwin, India ;
Rev. Professor J. Bascom, D.D., LL.D., President of Wisconsin University,
United States ; Rev. Canon Bell, M.A., Cheltenham ; Rev. J. F.
Fenn, M.A., Cheltenham ; Rev. R. B. Girdlestone, M.A., Clapham
Common ; Rev. R. F. Hosken, M.A., London ; Rev. D. Rhodes,
Oldham.

Also the presentation of the following Works for the Library :—

- "Proceedings of the Royal Society," Parts 181 to 183. *From the Society.*
 "Proceedings of the Royal Geographical Society." Vol. XXI. *Ditto.*
 "Proceedings of the Royal Institution," Part 66. *From the Institution.*
 "Proceedings of the Royal United Service Institute," Part 92. *Ditto.*
 "Proceedings of the Royal Colonial Institute." Vol. VII. *Ditto.*
 "Proceedings of the Geological Society," Parts 130 to 132. *From the Society.*
 "Proceedings of the United States Geological and
 Geographical Survey" (various). " *Survey.*
 "Proceedings of the American Philosophical Society," Part 93 " *Institute.*
 "Proceedings of the Barrow Natural History Field Club.
 Vol. for 1877. " *Club.*
 "Antiquity of Man." By T. K. Callard, Esq. *Author.*
 VOL. XII. O

"Dr. Jeffrey's Address at the British Association in 1877."	<i>Author.</i>
"Creation's Testimony to its God." Rev. J. Ragg.	<i>Ditto.</i>
"Christian Enquiry : Strutt's Inductive Method."	<i>Ditto.</i>
"Cephalopoda." By Prof. J. Barrande.	<i>Ditto.</i>
"Darwinism tested by Language." Dr. F. Bateman.	<i>Ditto.</i>
"Divine Providence." Dr. Croly.	<i>W. H. Ince, Esq.</i>
"Marquesan Traditions of the Deluge."	<i>Author.</i>
"Deuteronomy." By Prof. Sime.	<i>Ditto.</i>
"Free Trade Essays." G. H. Reid, Esq.	<i>Ditto.</i>
"Ideofone." By Rev. A. C. Cleary.	<i>Ditto.</i>
"The Visible Origin of Language." By the same.	<i>Ditto.</i>
"Imperial Federation." By F. Young, Esq.	<i>Ditto.</i>
"The London Quarterly Review."	<i>Hon. A. McArthur, M.P.</i>
"Nach, Rechts, und Links." By Prof. Schweizer.	<i>Prof. Heer.</i>
"New South Wales." By G. H. Reid, Esq.	<i>Author.</i>
"Pilate's Question." By Rev. Dr. Kennedy.	<i>Ditto.</i>
"Sexton and Watt's Debate."	<i>Ditto.</i>
"The Fallacies of Secularism." By Rev. Dr. Sexton.	<i>Ditto.</i>
"Scientific Materialism." By Dr. Drysdale.	<i>Ditto.</i>
"Sensational Science." By Dr. J. M. Winn.	<i>Ditto.</i>
"Spirit Scenes of the Bible." By Rev. A. R. Hogan.	<i>Ditto.</i>
"Le Pays de Uz." Par A. Lombard.	<i>Ditto.</i>
"Venus : Official Report on the last Transit."	<i>Ditto.</i>
"World, Origin of, according to Revelation and Science." By Dr. Dawson, F.R.S.	<i>Ditto.</i>
"Atlantidian Coleoptera." By T. V. Wollaston.	<i>Ditto.</i>
"Canarian Coleoptera." By the same.	<i>Ditto.</i>
"Hisperidean Coleoptera." By the same.	<i>Ditto.</i>
"Maderian Coleoptera." By the same.	<i>Ditto.</i>
"Insecta Maderiensa." By the same.	<i>Ditto.</i>
"Variation of Species." By the same.	<i>Ditto.</i>

The following paper was then read by the author —

**CREATION AND PROVIDENCE, WITH SPECIAL
REFERENCE TO THE EVOLUTIONIST THEORY.**
By JOHN ELIOT HOWARD, F.R.S.

THOSE who had not the opportunity of attending the meeting of the British Association (that Wittenagemote or "assembly of wise men," as the Saxons would have called it) might reasonably look for some consolation in the perusal of the President's Address.

Such a hope is destined to disappointment. The address is filled with anatomical details suited only to students of medicine; but with the avowed design of inculcating upon all present a belief in the doctrines of evolution and development, founded on implicit faith in the statements put before them. Dr. Thomson directs attention to the effect which these theories, as advocated by Lamarck and others on the Continent, and by Wallace and Darwin since 1858, have had in unsettling the belief of many persons in the older doctrines, but does not seek to correct this aberration; leaving his hearers under the impression that "cautious naturalists," or, at least, "a large majority of them," are thus influenced. Creation and Providence give way to evolution and development. To be thus assured *ex cathedra* that we have been all wrong in our views of these most important subjects may be widely influential on minds disposed to bow down to authority; consequently, the President cannot complain if his statements are subjected to searching criticism, and shown to rest on no solid foundation.

Before entering on these questions, I must, therefore, venture some remarks on the style of reasoning of the Address

to which I have referred. The President is compelled, with apparent reluctance, to admit that "the evidence from direct experiment is such as entirely to shut us out from entertaining the view that spontaneous generation occurs in the present condition of the earth." Thanks especially to Pasteur and Tyndall, this has indeed been triumphantly demonstrated. But, having thus surrendered the very key of the whole position, Dr. Thomson devotes his elaborate attention to the defence of the outworks. He says, "*we* are not relieved from the difficulty of explaining how living organisms or their germs first made their appearance." Of course, "*we*" ("*evolutionists*," that is) are not. If spontaneous generation is not true, if *life* can only proceed from *life*, the whole doctrine of evolution fails at the very commencement. It is a very obvious and oft-repeated truth that no chain can be stronger than its weakest link, and the chain of reasoning above referred to is *entirely wanting* in the first link. It hangs upon nothing! It has no answer to the inquiry, "Whence is the origin of life?" and the speaker is driven in his perplexity to adopt the most unscientific of all assumptions for the solution of the enigma, the suggestion of the impossible, as follows:—"It might be held that the conditions affecting the combination of the primary elements of matter into organic forms may at one time have been different from those which now prevail, and that under these different conditions *abiogenesis* may have been possible, and may have operated to lay the foundations of organic life in the simple forms in which it first appeared,—a state of things which can only be vaguely surmised, but in regard to which no exact information can be obtained."

Science is founded on the observation of fact, but evolutionism on the hypothesis that the reverse of all known facts may have been at some time true; the whole conditions affecting the combination of the primary elements of matter are rearranged to suit the theory. The quiet *assumption* that "organic life first appeared in simpler forms" is to be noted, and then the *candid* admission that this can only be vaguely surmised, and "no exact information can be obtained."

The whole passage is so complete a specimen of evolutionist argument, that I have not hesitated to present it entire. It is proverbially true that a man convinced against his will remains of the same opinion; and this, evidently, is the case with the Doctor, who first tells us that *abiogenesis* is impossible, then assumes that at some past period it *may* have been possible, then that it *must* have existed, and then that what

we want now to complete the proof is exact information *how* it existed. I extract from a recently-published work by Mr. Darwin, a specimen of the kind of reasoning objected to. In speaking of the varieties of *Primula*, he says:—"We may freely admit that *Primula veris*, *vulgaris*, and *elatior*, as well as all other species of the genus, are descended from a common primordial form, yet, from the facts above given, we must conclude that these three forms are now as fixed in character as are many others, which are universally ranked as true species. Consequently they have as good a right to receive distinct specific names as have, for instance, the ass, quagga, and zebra."*

It is always the same—*facts* on one side, *theory* on the other. On the *ipse dixit* of Darwin we may "*freely admit*" that of which no proof can be given, and which is the direct reverse of all present experience! Such is the faith that Darwin looks for (and not in vain) from his followers!

If we extend our inquiries over past ages to search for some justification of evolutionist assumption, we find, as in a valuable Address† just put into my hands, that "the whole evidence supplied by fossil plants is opposed to the hypothesis of genetic evolution, and especially the sudden and simultaneous appearance of the most highly organized plants at particular stages in the past history of the globe, and the entire absence among fossil plants of any forms intermediate between existing classes or families. The facts of palæontological botany are opposed to evolution."

I shall endeavour to show that there is an ORDER and a DESIGN, and a FIXEDNESS in nature quite irreconcilable with the essentially atheistic doctrine of a self-evolving and continually-changing universe.

To quote the words of a Fellow of the Royal Society in 1682:‡ "To philosophize is to render the causes and ends of things. No man, therefore, that denieth God can do this truly. For the taking away of the First Cause maketh all things *contingent*. Now, of that which is contingent, although there may be an *event*, yet there can be no *reason* or *end*; so that men should then study *that which is not*. So the causes of things, if they are contingent, they cannot be constant. For that which is the cause of this now, if it be so contingently, it

* *The Different Forms of Flowers*. 1877.

† *Fossil Plants and their Testimony in Reference to the Doctrines of Evolution*. By Wm. Carruthers, F.R.S., &c.

‡ *The Anatomy of Plants*. By N. Grew, F.R.S., &c. 1682.

may not be the cause hereafter; and no physical proposition grounded upon the constancy and certainty of things could have any foundation. He, therefore, that philosophizeth and denieth God, playeth a childish game."

For myself, I accept Creation as the exposition of the *mind* of God, and Providence as the expression of His ever-acting *will*. I ascribe all the varied forces and powers to the effect (mediate or immediate) of this *one* will, and I rest content in this philosophy.*

* There is one verse in Psalm xxix. which I must specially dwell upon, as illustrating this subject in a manner most powerfully calculated to arrest the attention. It forms part of the Sabbath morning service in the Synagogue, and the translation given in the prayer-book of the Jews is very much better than our version. The quotation-marks indicate passages taken from the Jewish prayer-book, "The Daily Prayers." London: 5602, page 114. The "sons of the mighty" are called to ascribe all the glory to Jehovah, whilst the storm arises in might and power from the Mediterranean—"the great waters." It then "shivers" the cedars of Lebanon, and makes the mountains to skip like the young unicorn. "The voice of the Lord flasheth flames of fire," "causing the wild deer to start," and "stripping the forests bare," until at length the fury of the tempest expends itself, after rolling over the land from the north, in the far-distant southern wilderness of Kadesh. The conclusion of the Psalm tells us that "Jehovah sat enthroned at the *déluge*," and Jehovah "will sit as enthroned King for ever." From this reflection arises the peaceful rest of His people in every storm (physical or moral). Jehovah will give strength unto His people, Jehovah will bless His people with peace. Psalm xxix. is grand in all its parts, but perhaps especially so in the thought (ver. 9) which it encloses and illustrates, "whilst in His temple everything declares His glory." The whole visible creation is here (as elsewhere) looked upon as a *temple*, and all the varied changes which it presents as instructing us in the glory of Jehovah. Into this temple we are introduced at our birth, and it is of immense importance that we should conduct ourselves therein as *worshippers*, that we should reverence the Creator, and treat with respect, as pertaining to Him, the creatures of His hand. When the mind has been overpowered by the grandeur of His works, the heavens, the moon, and the stars which He hath ordained, it is ready to question whether man, the small and apparently insignificant point in the vast spectacle, can really be the object of so much regard on the part of his Creator. But faith dissipates these fears, and shows us the position of man as really that of God's manifested king on earth, made to have dominion over all the works of His hands, and to render back the praises of all the earth to the Author of his being (see Psalm xix.). In the Psalm we have been considering, the angels, as "sons of the mighty," are called upon to adore the majesty of Jehovah. It is not impossible, since the Deluge is expressly mentioned, that a contrast is intended between Jehovah the enthroned king sitting unmoved and pre-eminent above the water-floods, and the heathen accounts of the same, with which David, from his Moabite ancestry, might be familiar. "The raging of a storm in the morning arose, from the horizon of heaven extending and wide. *Vul* in the midst of it thundered, and *Nebo* and *Saru* went in front, the *thronebearers* went over mountains and plains, the destroyer *Nergal* overturned." (The Chaldean account of the Deluge, *Bib. Arch. Trans.*, vol. iii. p. 551.) The heathen deified all the powers of Nature, but the chosen nation saw them all summed up in Jehovah. Hence

The Temple of Nature.

When I use the term Nature, I speak only figuratively, and not of any real existence; but I am unable to define to myself the exact meaning of the term, as it is frequently employed; for example, "the laws of Nature" would seem to imply that Nature was an existence of some kind capable of receiving and obeying laws. "The reign of law" in like manner, after all the explanation of the very able author of the book published under this name, does not seem to me capable of logical interpretation. "Force," as used by other writers, expresses a thought which has to be harmonized with the view above stated, unless "force" is conceived of as an existence apart from God. "Natural selection" implies the continual superintendence of some intelligent power, and cannot be supplemented by the improvement suggested in the change to "the survival of the fittest"; which, unless it be the jejune proposition, that those survive that do survive, is not true in Nature, as I shall presently show.

Thus the common plant *Lythrum Salicaria* is, according to Darwin,* "in that state in which Natural selection might readily do much for its modification"; but "Natural selection" has probably enough on her hands already, and *Lythrum*

I suppose arose the term *Jehovah Zebaoth*, which we translate "*the Lord of Hosts*." I do not find this term in the law (strictly speaking), as it comes in with the Book of Samuel. Before this time I read of "the host of heaven," the stars as worshipped by the nations; but in proportion as Israel was brought into manifest conflict with idolatry does the above expression come into prominence, becoming very frequent in the latter prophets. The revelation made to Moses in Exodus is strictly monotheistic. The "I Am" who then manifested His glory is "the blessed and only Potentate," Lord of angels, and of all created intelligences. Whatever further development of the knowledge of God was afterwards afforded must be taken in connection with this fundamental truth.

Wisdom is described in the Book of Proverbs as the wonderful artificer of the works of God, as His delight rejoicing ever before Him. I suppose that in man, as formed after the image of God, there is some faint reflection of this glorious truth. I am not called upon to elucidate the revelation foreshadowed in the Old Testament, but distinctly enunciated in the New, of "the Word who was with God, and was God," although the truth further expressed that "all things were made by Him, and without Him was not anything made that was made," might easily tempt me into regions of thought that I must not enter. My simple object is the monotheistic view of creation grandly brought out in the worship of the elders in Revelation (chap. iv.). "Thou art worthy, O Lord, to receive glory and honour and power: for Thou hast created all things, and for Thy pleasure they are and were created."

* *Different Forms*, &c., p. 149.

Salicaria remains the same, and seems likely to do so to the end of the world's history.

There is a statement in Genesis (ii. 3) which the best Jewish commentators* understand to mean that God created all His work "thenceforth to act"; that, having created the universe and all that it contains, the production of something out of nothing ceased, and the increasing reproduction of something out of something commenced.

"The works of Jehovah are great, sought out of all them that have pleasure therein." This expresses the reverent delight of man as a worshipper in the temple of Nature. Every fresh investigation of the works of God tends to exalt the glory of the great Creator. His wisdom is seen to be indeed infinitely varied,† and its effects are shown in the adaptation of means to an end worthy of Himself; and that is His own glory. Here the mind can rest as on an adequate explanation of the great enigma.‡

An evident design to clothe the rugged material of the planet we inhabit with the forms of vegetable and animal life in such rich luxuriance as to leave no part tenantless and void, is apparent to those who have pleasure in the works of God; for in whatever direction we turn our view, even in the most unexpected situations, we find the wonderful Artificer glorifying His own skill and delighting our minds with the contemplation of life adapted to the circumstances.

If the Arctic regions are explored, the extreme cold does not altogether prevent the putting forth of such forms of life, animal and vegetable, as are suited to this ungenial clime. If, on the other hand, we examine those hot and almost boiling springs, which disengage themselves from the bowels of the earth and spread an abnormal temperature around, even there some species of *conservæ* will be found adapted to the more than tropical warmth.

If we sound the mighty ocean, and bring up the ooze from its profoundest depths, we find abundant traces of life, vigorous, self-sustaining, self-enjoying, and presenting such forms of beauty as to delight the eye of the microscopist, to whom alone (as in the *Diatomaceæ*) these forms can ever be revealed.

If any phase of things is under our view, such as we have not before contemplated, we still perceive that all is arranged

* V. De Sola, *Genesis*, p. 5.

† ἡ πολυποίκιλος σοφία τοῦ Θεοῦ.—Eph. iii. 10.

‡ So Linnæus. "Finis creationis telluris est gloria Dei ex operâ nature per hominem solum." (*Introitus Sys. Nat.*)

with harmonious adaptation of every part to the mighty whole, in such a manner as to place before the attentive mind the *evident* proof of the continually operative superintendence of a providing and sustaining Power watching over the creatures of His hand.

If a mighty forest be consumed by fire, forthwith there springs up from germs, concealed perhaps for thousands of years, a new vegetation;* and, connected with this new vegetation, varied stores of animated life present themselves to our view.

If a volcanic island rises from the bosom of the sea, soon these desolate heaps of scorix and pumice show the first indications of a process which will eventually clothe them with beauty, and render this unpromising abode the fit receptacle of the stores of animated Nature, and finally of its master—man.

Or, on a smaller scale, if an infusion be prepared of some vegetable substance, how soon do we find this diminutive ocean filled with varied forms of life—life active, organized beings full of conscious enjoyment! Thanks especially to the admirable researches before referred to, we now know that these creatures are all the result of *life* proceeding from anterior *life*—that no such thing exists as matter setting to work to organize itself; but how wonderful the provision of germs and spores, by means of which the *vacuum* so soon becomes a *plenum*, unless the most elaborate care is taken to exclude the access of air containing these life-conveying particles.

It is most interesting to trace out the manner in which Nature sets to work to clothe with vegetation the pebbly shores from which the sea has retired, as is the case on some parts of our coasts. The early beginnings make the mind wonder at the presence of the germs and seeds of the suited plants, brought together apparently by a fortuitous concurrence of events, but none the less evincing design in their very adaptation to the purpose in view; whilst the beauty of some of them, such as the horn-poppy, the sea-thistle, the sea-pink, and the maritime bindweed, can only be explained on the principle that God delights to adorn the waste places of the earth with beauty.

A similar remark may be made in reference to the cryptogamic vegetation which embroiders the mountain rocks and boulders. Till quite recently the beauty of these minute organisms and their marvellous adaptation each to its peculiar habitat were things of no moment to mankind. On utilitarian

* Appendix A.

principles it would be difficult to find a reason for their existence. Why should the barren rocks be made to yield a treasure of delight for some half-score of naturalists in this late period of the world's existence?

The explanation of the varied aspects of the Cosmos, the beautifully adorned world we live in, is given us in Psalm civ., where everything is traced to the great First Cause, the Eternal and self-existing Jehovah. The psalm is the happy expression of a soul in conscious knowledge and enjoyment of the presence *sought* and not *shunned*, of the beloved object of its affections. "Bless the Jehovah, O my soul, O Jehovah my God, Thou art very great, Thou art clothed with honour and majesty." If this, as the *utterance of an unknown writer, came before us for the first time*, our reasonable course would be to inquire what he has to say in illustration of the proposition which in his language of praise he puts before us. Does he sustain this magnificent beginning, so that his hearers should be able, according to his express desire, at the close to praise Jehovah with him? *Science* cannot decide the question, it must be left to *faith*. Science and faith are not in opposition here, but science is simply dumb, as incompetent to discuss the subject.

It is said that when Laplace was introduced to Napoleon, the Emperor objected to the great astronomer's having framed a scheme of the Universe, without the existence of God, and that the reply of this latter was, "Your majesty, *we had no need of this hypothesis*." Such was his opinion, but it was not that of the Emperor, nor is it the opinion of the most intelligent of mankind, to whom the notion of a self-evolving and self-regulating Universe is not only inadmissible but absolutely *unthinkable*.

It must be admitted that the Cause referred to in Psalm civ. is capable of producing the effects, and that the effects give strong demonstration of the existence of the unseen Cause.

It is evident to me that the God of nature is the God of the Bible. The very points which sceptics select as their chosen themes of attack in the Scripture, have their exact parallel in nature. In that most wonderfully touching and sublime Psalm, the 90th, which commends itself to the inmost feelings of man's heart, as he follows his beloved ones to the tomb, we read, "Thou turnest man to destruction." This is a theme that must be dwelt upon with caution, and with reverence. In the pairing together of nature everything has its appointed *destroyer*. Wondrous skill is displayed in preserving the balance amongst the creatures. No fruitful source of over-

population is without some suited agent to check the evil. And the destroyers again are fitted in exactest adaptation to their work of limitation. If the horned snake of Egypt is fitted to hide himself amongst the sands of the desert, or from beneath his stony lair, "biteth the horses' heels, causing his rider to fall backward," on the other hand, the python serpent suspending himself amid the giant primitive forests of the islands of the East, resembling the branch of some harmless vine, thence springs upon the passing herd, and dispenses death unlooked for, but not the less sure.

Or if the gentle eye and elegant length of neck of the camelopard be suited to discern the foliage and take his pasture amid the branching forests of Southern Africa, and if his mottled form be so assimilated in colour to the aged and parti-coloured acacia as not to be easily distinguished—amidst all these beneficent provisions for his preservation, are there none for his destruction? Yes! the spring must be sought to quench his thirst at eventide, and there the gaunt destroyer, the king of beasts, with all appliances and aids for slaughter, shall drink his blood.

"The king of beasts," as we call him now, but what a diminutive creature compared to the destroyers of the primitive world, long ages before man trod upon its surface! I will not cite as an example the Saurian race, for the aspect of that age is too appalling, and man was certainly absent from the scene; but ask you to look upon the great cat of the caverns, and all the others with whose bones we are familiar; and who must have been ordained to limit the numbers of the quiet and peaceable *behemah*, or beasts of the field, lest these should overpopulate the earth.

We need not go so far for illustration, as the whole feline race are by nature formed especially as destroyers, and, let me remark, are some of the most perfect creatures in bone and limb of all the handiwork of God. Moreover, their fierce delight in destruction, and even, as in the common cat, in prolonging the tortures of their victim, results from their organization. If we look again at another familiar race of creatures, the spiders, we find marvellous display of the manifold wisdom of God in these really beautiful animals, whose diversified habits of ensnaring and cunningly captivating their victims are so well known.*

* "Ainsi l'araignée, qui tisse sa toile et secrète un fil que nous ne saurions fabriquer avec toute notre science, est à elle seule une merveille de

Beautiful destroyers, in fact, abound everywhere. It is most interesting to watch the interweaving of these forms of danger with the harmless seaweed in the pools of ocean, and to pursue the theme by the aid of the microscope. If it were not for prodigious fecundity, we might marvel at the escape of any of these tiny and unprotected existences.

The vegetable creation is no exception to the rule of the existence of destroyers. In fact, the serpentine race have their exact parallel in those climbing plants which are designed to strangle and to overpower the nobler denizens of the forest. Even the strength of the oak is often poorly matched against the insidious advance and deadly embrace of the ivy...

Wherever man makes his way, he is prone to overturn the balance and harmony of nature. He has introduced the thistle, and the beautiful native vegetation of the South American plains is supplanted by this noxious weed. He has introduced the rat into New Zealand, and the curious native birds can no longer rear their young unmolested.* He strips the mountains bare of their forests, and arid plains take the place of fruitful and pleasant prairies; or he cuts down the woods, in order to deprive a conquered population of shelter, and converts a land, such as Ireland once was, into irreclaimable morass. The utter destruction of the enemy's country was often systematically pursued. Thus Assurbanipal says:—

"For a month and a day Elam to its utmost extent I swept,
The passage of men, the treading of oxen and sheep
And the springing up of good trees I burned off the fields,
Wild asses, serpents, beasts of the desert, "*Ugallu*,"
Safely I caused to lay down in them."†

In very many regions of the old world, these desolations have left their effect till the present time.‡

Now in the view of the universal prevalence of destroyers, what becomes of the doctrine of "the survival of the fittest"? Is the cat more fit to survive than the garden warbler which it massacres? or is the man-eating tiger of India a more worthy survival than the native whom he carries off into the jungle?

Darwinism has never attempted to cope with the difficulty of explaining how the poison of the viper could be developed out of a harmless snake.

création, qui cependant ne dépasse en rien un brin d'herbe, qui pousse, ni une branche d'arbre qui développe son fruit, au centre duquel est la semence qui doit se reproduire à l'infini."—*Monde des Atomes*, p. 3.

* Buller's *History of the Birds of New Zealand*, pp. 32, 93.

† *Assyrian Discoveries*, by G. Smith, p. 355.

‡ Appendix B.

The book of Genesis declares that God formed everything after its kind, or more properly, after its ideal type,* so that we have in the Bible a reasonable explanation of the fact, as above stated, that we have everywhere creatures formed to fulfil the purpose of keeping down excessive production.

In the symbolic aspect of nature these typical destroyers teach us invaluable lessons.

Σύμβολα γὰρ Πατρικὸς νόος ἐσπείρε κατὰ κόσμον.

For the paternal mind hath sowed symbols through the world.†

There is no mercy in the ordinary course of nature. Her language is "woe to the weak and to the miserable." As soon as health and strength decline, whether in the animal or vegetable creation, numberless destroyers seize upon their predestined prey, to hasten its exit from a world which the sickly one seems to disfigure by its presence; for nature is concerned for the perfection and continuance of the race rather than of the individual. At least it would be difficult to read in any other light the combats of the males in the season of erotic madness. It is obviously an advantage to the herd that the strongest should survive, but what are we to say about the defeated ones?

Nature buries her dead without the slightest regret at their departure; she wears no mourning, and does not even affect the resemblance of grief; for she is ever beautiful and ever young; all the sentimental ideas which we attach to her are without foundation in fact, and are only the reflection of certain qualities in ourselves. Nature is ever unfeeling, and if the earthquake wave or the Indian typhoon sweeps a hecatomb of victims to destruction, mingling the tiger of the jungle and the serpent of the forest in one common destruction with him who calls himself the Lord of Creation, it will not in the least diminish the cheerfulness of ocean when the storm is overpast. The "immeasurable laughter of the waves" ‡ will go on as cheerily as ever!

"O quam contempta res est homo, nisi supra humana se erexit!"

Linnaeus (Introitus).

* ἴν Meen, "form; hence *species*, kind, sort; comp. *Greek ἰδέα*."—*Ges. Lex. in loco*.

† Oracles of Zoroaster. *Cory's Ancient Fragments*, pp. 100—106.

‡ Æschyl. *Prom.*, 89.

ποντίων τε κυμάτων
ἀνθρωπίνον γίλασμα.

Presumably the great Linnæus felt that fallen man needs a better gospel than Nature can supply. At all events, he trod with unshod feet the temple of Nature in the spirit of a devout worshipper. He describes himself as aroused to behold the eternal, immense, omniscient, omnipotent God, whom he says (in reference apparently to the vision of Moses), "I beheld from behind, and was astonished. I traced somewhat of His footsteps in created things; in all which, even in the very smallest and scarce perceptible, what Power, what Wisdom, what inextricable Perfection! I observed animals relying for their support on vegetables, vegetables on terrestrial things, terrestrial things on the world itself; but the world borne in its appointed course round the sun, from which it borrows its life: the sun finally revolving round its axis with the remaining stars; the system of stars, in courses and number not to be defined, all circling in the vast ether, upheld by the incomprehensible *Prime Mover*, the *Cause of Causes*, the *Preserver and Ruler of the universe*, and the Lord and Artificer of this piece of workmanship, the world:—without whom nothing exists; who founded and created the whole, and who both fills and eludes our sight; for He is only to be seen mentally, since He withdraws Himself into the sacred recesses of His own majesty, and gives no audience to any except in a spiritual manner. He is all Intelligence, all Sight, all Soul, all Spirit, all Himself. The conjecture of the human mind cannot trace out His lineaments, and is forbidden to form of Him any likeness."*

* *Imperium Naturæ*.—"Deum sempiternum, immensum, omniscientem, omnipotentem expergefactus transeuntem a tergo vidi et obstupui! Legialiquot ejus vestigia per creata rerum, in quibus omnibus, etiam in minimis et fere nullis, quas vis! quanta Sapientia! quam inextricabilis perfectio! Observavi animalia inniti vegetabilibus, vegetabilia terrestribus, terrestria telluri; tellurem dein ordine concusso volvi circum Solem, a quo vitam mutuatur; Solem demum circa axin gyrari cum reliquis astris systema siderum, spatio et numero non definiendum, mediante motu in vacuo nihilo suspensum teneri ab incomprehensibili *Movente Primo*, *Causa Causarum*, *Custode Rectoreque universi mundani hujus operis, Domino et Artifici* Totus est SENSUS, totus VISUS, totus AUDITUS, totus ANIMÆ, totus ANIMI, totus SUI, hujus EXTERA indagare non capit humanæ conjectura mentis.¹ NUMEN esse credi par est, æternum, immensum, neque genitum neque creatum. Hoc sine quo nihil est, quod totum hoc fundavit et condidit, quodque oculos nostros et implet et effugit, cogitatione tantum visendum est, in sanctiore enim recessu Majestas tanta delituit, nec ulli dat aditum nisi animo."—Copied from the 12th ed. *Systema Naturæ* in possession of the Linnean Society.

¹ Exod. xx. 41.

Stability in Creation.

Science and Faith part company at the first verse of the first chapter of Genesis. Faith is an act of submission which science declines to yield. Science knows nothing, and can know nothing, of a "beginning." It is inconceivable to the mind of man, and the truth can only be received by faith, on the authority of Divine testimony. So we read (Heb. xi. 3) that it is "through faith we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear." Sound philosophy will take into account and examine this testimony, and will record its perfect harmony with what meets our observation.

The stability of the Creation is found in God himself. We have only recently begun to appreciate the stability which He has communicated to the ether, which is the medium of conveying the impressions of light. Of this we are assured, that it consists of created particles, which we call imponderable, because we have no means of weighing them; but its pressure must be prodigious, as is shown by its elasticity, of which the swift transmission of light is an indication, and through which the lightning-flash, in passing, produces the accompanying thunder which results, from a slight disturbance, and a local one, of this equilibrium.* The ethereal creation is, in the most eminent degree, *stable*, and has more the properties of a solid than of a liquid.

In the composition of the masses of inorganic matter which form the strong foundations of the earth we have *absolute stability*. I have shown sufficiently, in previous papers,† that this is the nature of the atoms themselves, and also of the molecules resulting from the balancing of the atoms in more or less elaborate systems, arranged according to never-changing laws. These attractions or repulsions operate with mathematical exactness between atom and atom, or between molecule and molecule, but no further. There is no consent of atoms to produce a certain effect; no central force organizing; no variability of structure, such as comes in with life, and pervades, more or less, all its manifestations. Such as the chemical relationships of matter now are, such they must have been

* *L'Architecture du Monde des Atomes*. Gandin, Paris, 1873, p. 5.

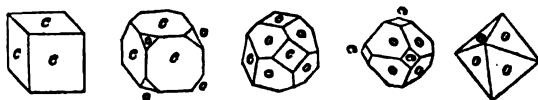
† See *Victoria Ins. Trans.*, 1873: "Scientific Facts and Christian Evidence." *Id.*, 1874: "The Contrast between Crystallization and Life."

through all time, and such, as far as can be traced, they exist to the furthest extremities of the universe.

The laws of chemical combination do not seem to be taken into account by those who would fain make life a manifestation of crystallizing action. A fresh proof of this meets me in the Address I have been considering. The Doctor speaks of "a double conical or spindle-shaped radial lineation of the protoplasm, which, if we were inclined to speculate as to its nature, seemed almost as if it marked out the lines of molecular force acting in the organizing process."

Molecular force acts only between atom and atom, and this speculation as to the lines of molecular force is as much at variance with all that we know of chemistry as is the notion of a spindle-shaped lineation resulting therefrom. All solid bodies are formed by the reunion of molecules placed together. These molecules are like each other in the same body, but different from those of another body. The result is, in bodies susceptible of crystallization, their arranging themselves in their own peculiar form; the crystals of sea salt, for instance, in the form of a cube, or some shape of which the cube is the basis, always in regular mathematical figures, although these may be obscured in manifestation.*

Fig. 1.



Transformation of the Cube into a regular octohedron. (Laurent, *Précis de la Cristallographie*.)

The cube, which is the very symbol of stability, may be taken as the expression of all inorganic nature. It is fixed, unchangeable, self-contained, reaches forth to nothing beyond, owns no organizing power. Such as it is, such and no other (as far as science can see) it must be to eternity.

Beauty in Creation.

With the introduction of life comes in a completely new order of things. The structure of chemical compounds is entirely submitted to mathematical law; whilst, on the contrary, in organization mathematical law has been avoided.† Every

* *Cristallographie*, Laurent, pp. 52-8, 25, &c.

† *Architecture du Monde des Atomes*, p. 3.

one will understand that, if he were presented with a drawing of a plant bounded by rectilinear outlines, or of an animal forming an exact cube, such professed likeness was an unnatural impossibility. Freedom of development comes in place of mathematical law, and with this freedom beauty and variety appear.

In order to attain these results (apparently), the spiral takes the place of the straight line. Even in the growth of the upright stem of a tree we may notice that spiral tendency, which is still more evident in the set of leaves on a plant, or in the arrangement of the parts in the cone of a fir. Cells with spiral cell-walls originate a vessel with spiral walls; these vessels twine in a certain direction and produce a spiral stem.* The stem itself may twine around another tree in a spiral manner; leaves, flowers, fruit, may be arranged in spirals of various orders. The shell of the nautilus is rolled up in a most graceful spiral; the heart of mammals is a double continuous spiral of exquisite beauty. The wings of birds, and the extremities of bipeds and quadrupeds, are distinctly spiral in their nature, and their movements are curved spiral movements; nay, more, the vertebral column itself is a spiral of very unusual but delightful curve. Dutrochet states that there is a revolving movement in the summits of stems,—a spiral rolling of the stems round their supports, a torsion of the stems upon themselves, and a spiral arrangement of leaves; all these being in each plant in the same direction. These phenomena, he avers, are owing to an *internal vital force*, which causes a revolution round the central axis of the stem. “The heart pulsates while yet a solid mass, and before it contains blood.”† Thus we continually touch upon the verge of the *unknown*. The very plants that twine around our hedges present problems which pass all the boundaries of science. When we come to speak of voluntary motion (as in *Desmodium gyrans*), of what in animals would be termed instinct, of extraordinary sensibility to impressions in mere plants, amounting to their recoiling with disgust from some objects and attaching themselves to others, it is obvious

* Pettigrew, *Physiology of the Circulation*, p. 17, note. A good illustration of *spiral cells* may be seen in Plate III. of my *Quinology of the East Indian Plantations*, a copy of which work I have presented to the Institute. In Plate II. may also be seen a drawing of the fibres of the liber, having a similar spiral formation, seen very beautifully under the microscope.

† *Id.*, p. 127.

that we are incapable of explaining *how* these things can be. We can only admire and adore.

Fig. 2.



Fig. 3.

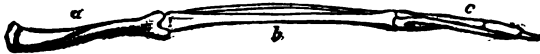


Fig. 4.

Fig. 2. Wax cast of the left ventricle (b) and portion of the right ventricle (a) of the heart of a deer. Shows the spiral nature of the left ventricular cavity,—the spiral courses or tracks of the masculi papillares (x, y), and how, between the masculi papillares, two spiral grooves (j, q) are found (they are spiral ridges in the cast), which conduct the blood to the segments of the mitral valve in spiral waves.

Fig. 3. Bones of the anterior extremity of the elephant. Shows the spiral arrangement of the bones of the fore leg. q, humerus; x, q', radius and ulna; o, bones of foot.

Fig. 4. Bones of the wing of a bird. Shows their spiral arrangement. Compare figs. 2 and 3. The bones of the human arm resemble those of the fore-limb of the elephant and the wing of the bird. a, humerus. b, radius and ulna. c, bones of the hand.*

Creation everywhere discloses to us Beauty. *Harmony, grace, and proportion* are always present, introduced for their own sakes, or rather to show forth the glory, and to meet the Infinite Mind of the great Architect of all.

Our grand old mediæval builders seem to have entered into the spirit of the display of God's glory in the visible world, and to have adopted in our cathedrals these two great principles of Stability and Beauty. We have *stability* where it is needed, and that secured, as well as by the masses of Stone-henge; but we have all the delightful variety in ornamentation, ever refreshing the eye with forms given to man for his admiration. In the vast and mysterious relics of the Pagan

* These illustrations are from Pettigrew's *Physiology of the Circulation in Plants, in the Lower Animals, and in Man*, and are inserted here by kind permission.

religion of the earlier inhabitants of these isles, we have stability indeed, but no beauty. Stonehenge, and the kindred structures of Peru, described by Squiers,* were devoted to a worship, solemn, indeed, and mysterious, but in which terror took the place of love.

"Pavet ipse sacerdos

Accessus : dominumque timet deprendere luci."†

It was impossible that heathenism, in any of its forms, should enter with real sympathy into the refined perception of beauty displayed in the works of creation. Only in Greece does there seem to have existed the conception that there was something divine in the beauty of the human form.

In this respect their philosophy rather than their religion antedated somewhat the influence of Christian ideas. There is now no Christian mind that cannot understand the formation of all creatures as leading up to man, so that he is the key-stone of the mighty design towards which all converges, and in which all things centre. (See Hebrews ii.)

Man is the visible king, and in all the details of his structure we easily discern the mark of inbred royalty.

"Os homini sublime dedit, cœlumque tueri,
Docuit, et erectos ad sidera tollere vultus."—Ovid.

Dominion and power, and moral and intellectual grace, are designedly expressed in the whole of man's formation, so that I take nothing short of *the person of man* as the conception of what I understand by organic nature; instead of the cube by which I symbolize the inorganic, or what we may call brute matter. To confound the divine prerogatives of man with those of the beast is a reversal of the whole scheme of Creation. It is a high crime of *lèse majesté* against the dignity of man, and an impeachment of the wisdom and goodness of his Creator.

Man is the expression of the *majesty*, woman of the *beauty* of Creation.

The perception of beauty in Creation is the reflection of an attribute of the Infinite Mind, and, like the perception of harmony, is intuitive, belonging to man in his original perfection, but now very variously shared by individuals of the human family. But if this last statement be admitted, much less ought we to extend to the lower animals these æsthetic tastes. Can we suppose any sense of abstract beauty to influence the mental

* Squiers' *Peru*, 1877, p. 384, &c.

† Lucan, *Pharsalia*, lib. iii. 424, 425.

emotions of the swine? or have we any reason to think more highly of the taste of a peahen? If we attentively watch the actions of these latter, even in the season when the male's plumage is most attractive, we shall easily perceive that a small piece of biscuit outweighs in her predilections all the gorgeous spectacle that nature has given her in her liege lord; to whom her fidelity is only assured by superior strength and masculine vigour; and however great the beauty she relinquishes, she quits it all apparently without regret if a stronger rival drives her mate from the field, and appropriates her for his own. There is no stability in her affection. The peacock, on his part, evidently appreciates the qualities of his mate, and relies on his strength, and not on his attractions, driving her before him with a masterfulness which is amusing to behold. *Il se pavonne* (if I may be allowed to use an untranslatable French expression) for his own amusement, and not for her delight. The thrill of pleasure accompanying the expansion of his tail is in no way dependent on her stolid regard; nor do I believe that the range of her visual organs is sufficient to take in at once, as we do, the superb spectacle. Certainly the-propagation of the race would have gone on just as well if the male had been as plain in his plumage as the female; as we may see in the sparrows, those birds almost proverbial for their powers of multiplication.

What, then, becomes of the theory of "sexual selection" in reference to beauty? It presupposes æsthetic tastes which we have no right to suppose to exist, and it is not sustained by observation of the actions of the human race, in whom these sentiments do certainly exist.

Nevertheless, it is matter of common observation that these do not absolutely dominate the preferences of either sex. Those who do not read human nature, may, if they read *Hamlet*, easily unravel this.

"Look here, upon this picture and on this."

It is notorious that in the animal creation, rank, and to us often repulsive, odours, are more attractive than all the beauty of Paradise.

It is not to be supposed that those who advocate a mechanical and self-evolving universe should have any delight in the beauty of Creation, or see any object in its existence. To them it might as well be bounded by straight lines, and dressed in universal drab.

It is otherwise with men of finer minds and of more just perceptions. Foremost amongst these, Ruskin thus contrasts organic and inorganic nature; and I shall quote the passage

as a good prelude to what I have hereafter to say. This writer, in an admirable chapter on the leaf, says: "This peculiar character exists in all the structures thus developed, that they are always visibly the result of a volition on the part of the leaf meeting an external force or fate to which it is never passively subjected. Upon it, as on a mineral in the course of formation, the great merciless influences of the universe and the oppressive powers of minor things immediately near it, act continually. Heat and cold, gravity and other attractions, windy pressure or local and unhealthy restraint, must in certain inevitable degrees affect the whole of its life. But it is *life* which they affect—a life of progress and will, not a merely passive accumulation of substance. This may be seen by a single glance. The mineral, suppose an agate in the course of formation, shows in every line nothing but a dead submission to surrounding force. Flowing or congealing, its substance is here repelled, there attracted, unresistingly to its place, and its languid sinuosities follow the clefts of the rock that contains them in servile deflexion and compulsory cohesion, impotently calculable and cold. But the leaf, full of fears and affections, shrinks and seeks as it obeys. Not thrust, but awed into its retiring; not dragged, but won to its advance; not bent aside as by a bridle into new courses of growth, but persuaded and converted through tender continuance of voluntary change."*

Ruskin concludes his remarkable review of the building up of trees thus: "The beauty of these buildings of the leaves consists from the first slip of it to the last in its showing their perfect fellowship, and a single aim uniting them under circumstances of various distress, trial, and pleasure; without the fellowship, no beauty; without trouble and death, no beauty; without individual pleasure, freedom, and caprice, so far as may be consistent with the universal good, no beauty . . . So soon as there is life at all there are these four conditions of it—harmony, obedience, distress, and delightful inequality."†

The above language may seem too figurative, but it expresses realities in nature the explanation of which has to be sought; as for example, the mode in which light attracts vegetation, of which the sunflower furnishes a familiar illustration.

The goodly wings of the peacock, and the feathers of the stork and of the ostrich, are spoken of in Scripture as the pre-eminent glory of the Divine Creator.‡ We have thus a satisfactory reason for their existence, and an indication that man,

* *Modern Painters*, vol. v. p. 33.

† *Ibid.*, vol. v. p. 76.

‡ Job xxxix. 13.

in admiring them and giving the suited praise for their existence, is performing in so far his right part in nature.

Christ has said, "Consider the lilies, how they grow; they toil not, they spin not, and yet I say unto you, that Solomon in all his glory was not arrayed like one of these."

Harmony in Nature.

"The man that hath no music in himself" is set down by our great poet as very low in the scale of humanity. "Let no such man be trusted."* No doubt there is truth in this estimate, founded on a keen though rather shrewd observation of mankind. A deficiency in these finer perceptions is in so far a loss of the original dignity of man's nature, and places the individual more out of fellowship with the works of God. It is of little use pointing out to such the testimony which the general harmony of nature bears to its being the result of one Mind, and that one Mind the source of all beauty.

One aspect of this general truth was pointed out to me first by my late friend Berthold Seemann, who refers to the subject in his "Historical Notice" prefixed to the *Flora Vitiensis*.† He describes the banks of the rivers and rivulets in the islands of Fiji as densely crowded with vegetation, amongst which are found several species peculiar to these localities, all of which would have to be classed physiognomically with Humboldt's "willow form," a set of plants which, unaffected by the occasional rising and turbulence of the streams, not only have the same kind of foliage, habit, and mode of growth as genuine willows, but evidently serve the same purpose in Nature's economy,—that of protecting and keeping together the river banks, though they are not related to the genus *salix*. One of these is indeed a fig (see Plate LXVII.). Seemann says:—

"The frequency of plants belonging to the willow form on river banks in all countries of the world appears to have been dealt with first by Humboldt in his *Ansichten der Natur*. These outer resemblances between different species which have no organic relationship have played us botanists many a trick, and have been the cause of some otherwise incomprehensible synonyms in our systematic works by really good botanists relying too implicitly upon them—resemblances to which the term 'mimicry in nature' has been applied. I have objected to this term, because in applying it, either in zoology or in botany, the whole question here cropping up is prejudged, it being assumed that (1) organisms have the power to mimic

* *Merchant of Venice*.

† *Flora Vitiensis*, p. xiv.

other organisms, and (2) that they have come in contact with those organisms which they are supposed to resemble." *

Dr. Seemann was no evolutionist, and I the more lament his loss. This being the case, his observations may be dismissed as unworthy of attention by the class of minds I have referred to, but must, I think, be considered conclusive by those capable of understanding the force of sound argument.

Moreover, the resemblance is sometimes such as immediately to strike our fancy, but to be of no possible advantage to the plant or animal. It is sufficient to point to two plants under my own observation, the butterfly orchis and the bird-headed aristolochia, as illustrations of this. I have before me a leaf-insect, which I received in a live state, green and fresh, but which now represents sufficiently the *faded* leaf. But this is not all. The egg from which the creature originated (and of which I have also a specimen) is so wrapped up in its integument as perfectly to resemble a *seed*, carrying out thus the *mimicry* to its full extent.

Harmony and what is called "mimicry in Nature" are not to be reconciled with Darwinism.

Soul in Organized Nature.

My attention was first called to the subject of the unfolding of apparent intelligence in Nature when, as a youth, I amused myself with cultivating plants in my father's conservatory. Especially the production of adventitious roots † called my thoughts to the fact of some apparent power in Nature to meet emergencies; as in the case of a particular plant from the Cape, to provide against the fall of a tall stem by stays on every side—an arrangement which is much more strikingly seen in some trees, as in the palm of the Sechelles, in which they resemble the shrouds of a ship, and are indispensable to guard against the influence of the fearful hurricanes often sweeping over those islands.

The subject has at times occupied my thoughts ever since, and I still wait for the explanation. If I see my way at all towards a solution of the real mystery of Nature, it must follow that the mechanical-universe-mongers have entirely missed their way, and have not so much as lifted a corner of the veil of the mighty mother. ‡

It is only of late that we have ascertained that *matter* is not the only *materia* used in building up the universe, for we have

* *Gardeners' Chronicle*, June 27, 1868. *Journal of Botany*, p. 213. 1868.

† See an example of these in plate, *Crytallisation and Life*, p. 27.

‡ See Plutarch's *De Isid. et Os.*, page 28: Inscription in front of the temple of Isis.

only proceeded so far in the demonstration of the existence of the luminiferous ether as to say that we know intellectually that such a thing *must* be, that it is all around us and within us; but we are not cognizant of its varied properties. It is quite a logical deduction to suppose that we here stand on the verge of a mighty ocean of unfathomed existence, and that we need a Columbus to explore its depths.

Without presuming to spread our sails for this venture, we shall, I hope, be able to agree in this statement, that there is *soul* ($\psi\upsilon\chi\eta$), *anima* in all organized Nature, and that it is this which distinguishes organized existence from inorganic matter. It is not only manifest in the original construction of the individual, but presides over its future destinies, enabling the young of each species to act according to its special destination.

To obviate misconception, I must remark that I am here propounding no new doctrine, but one which is distinctly stated in Genesis, recognized throughout the law of Moses, and common also to the whole ancient world. The words *nephesh*, *psyche*, and *soul* are used with considerable latitude of meaning. The expression *nephesh* may be well studied in the Lexicon of Gesenius. On the whole, the words *animal life* may be found to convey the meaning in the least objectionable way, but yet not with entire accuracy; since affections and various emotions are ascribed to it which we are accustomed to speak of as belonging rather to the mind.

The seat of this vital principle is considered to be the blood, and that when the blood is poured forth the soul is poured forth with it. "To blood is ascribed in Scripture the mysterious sacredness which belongs to life, and God reserves it to Himself when allowing man the dominion over and the use of the lower animals for food. Thus reserved it acquires a double power—(1) that of sacrificial atonement, in which it had a wide recognition in the heathen world, and (2) that of becoming a curse when wantonly shed, *e.g.*, even that of beast or fowl by the huntsman, unless duly expiated, for example, by burial."*

The organizing principle in the vegetable creation is not called "soul," but must have some analogy to it, since we find in some plants both sensation and automatic movements in a rudimentary state. It may be a different manifestation of ethereal substance, of which there may be numberless modifications; and of which the animal life in man must be the highest type, and may be the seat of those instincts which he

* *Dictionary of the Bible*, *sub voce* "Blood."—Rev. H. Hayman, B.D. Refer. Gen. ix. 4; Lev. vii. 26; xvii. 11, 13.

shares with the lower animals. With these he has sufficient relationship to enforce upon him the law of kindness—the avoidance of the infliction of unnecessary pain, and of that love of cruelty which marks the worst type of humanity.

Burns, in his admirable “Address to a Field Mouse, on turning her up in her nest with the plough, Nov., 1785,” shows how these things strike a noble and generous mind:—

“I’m truly sorry man’s dominion
Has broken Nature’s social union,
An’ justifies that ill opinion
Which makes thee startle
At me, thy poor earth-born companion
An’ fellow mortal,” &c.

Man’s Place in Creation.

For those who reject the teaching of Scripture, there is no common ground on which believers in its authority can discuss the questions on which we now enter. Those who receive it have an inestimable advantage in securing a distinct standpoint from whence they may proceed to investigate (as far as may be) the nature of which they are partakers; and which they find by experience differs so widely from that of brutes.

This distinction is specially, and above all things, to be traced in the *pneumatic* nature of man. In the *animal* and *psychical* nature, he has much in common with the lower orders of creation, but he stands entirely alone in the highest, and therefore the most characteristic attribute of his nature. He is not only a separate species, but he must have required a separate act of creation, placing him at an infinite distance above the rest of the works of God.

According to the book of Genesis,* Elohim created Adam (“the human race,” אָדָם הָאָדָם) in His image, in the image of Elohim created He him, male and female created He them. And Elohim blessed them, and Elohim said unto them, “Be fruitful and multiply, and replenish the earth and subdue it, and have dominion over the fish of the sea, and over the fowl of the air, and over every living thing that moveth upon the earth.”

According to Jewish commentators,—“When organized nature is called into existence, the words used are, ‘let the earth shoot forth,’ ‘let the waters teem,’ ‘let the earth bring forth’; but when man, an intellectual being, composed of spirit as well as matter, is to be created, it is no longer earth or water which are directed to bring forth; but the concentration of all powers, Elohim, exclaims, *We will make man.*”†

* Gen. i. 27.

† De Sola, *Genesis*, p. 4.

Our Christian commentators may differ in measure, but will not detract from the grandeur of this distinction. God chose to create man, alone among all creatures of the earth capable of the knowledge of Himself. He therefore gave him not only a *psychical*, but a *pneumatic* nature. He formed his body indeed of the dust of the earth, that is to say, of the materials of this visible and tangible world, but he superadded something of His own special bestowment. He breathed into his nostrils the breath of *lives*, חיים and man became a living soul.

The living soul life נפש חיה he shares in common with "every beast of the earth, and every fowl of the air, and every thing that creepeth upon the earth wherein there is *living soul*";* but taking into consideration the speciality of the act, and the plurality of the result "lives," and not simply one life, we are fully justified in the above conclusions.

In reference to the inferior creation, all is described as the simple embodying of *ideas*, previously existing in the Divine mind, or perhaps I should rather say in the Logos or personal Word Himself—"Jehovah Elohim made every plant of the field before it was in the earth, and every herb of the field before it grew."†

Παντοιας ιδίας κεχαρισμένος, ὡν μία πηγή.

Beautified with all kinds of ideas of which there is one fountain.‡

These are all transitory; they may pass away, and the very type itself be forgotten until it be resuscitated through the researches of the palæontologist, bringing to light the wonders of a past age.

But the Scripture declares it is not so with man, for the Eternal One (Jehovah) declared to Moses, "I am the God of Abraham, and the God of Isaac, and the God of Jacob. God is not the God of the dead, but of the living, for all live unto Him."§ If they live unto Him, they live according to His eternal life. His name, I AM, secures unto them an eternal NOW in His blissful presence.||

* Gen. i. 30.

† Gen. ii. 5.

‡ Cory's *Ancient Fragments*, p. 106.

§ Matt. xxii. 32; Mark xii. 27; Luke xx. 38.

|| Well given by Watts as follows:—

- 1 His boundless years can ne'er decrease,
But still maintain their prime;
Eternity's His dwelling place,
And Ever is His time.
- 2 While like a tide our minutes flow
The present and the past;
He fills His own immortal Now,
And sees our ages waste.

Man has, in common with the lower animals, the *psyche* or animal soul, which in them, as in him, is intimately connected with the blood, and seems to possess the brain as its special organ of thought—thought which, to a certain extent, is shared by the lower animals, as, on the other hand, he shares in measure their instincts.

But in the *pneuma* he stands solitary and alone. He can find no helpmeet amongst the lower animals to satisfy his *pneumatic* nature. He is formed for God, and is restless till he finds rest in Him. He is the crowning work of the great Artificer, introduced last, as the link uniting the whole Cosmos with its Creator—made so far in the likeness of God as to seem to share in some measure His attributes. He is so great in his powers as to be somewhat less than Almighty, but yet so exalted as to be in reference to the lower creatures a kind of visible god upon earth.

“What a piece of work is a man! How noble in reason! How infinite in faculties! in form and moving how express and admirable! in action how like an angel! in apprehension how like a god! the beauty of the world! the paragon of animals!”*

Can such a creature be the mere “*quintessence of dust*”?

Such and so great and so important a being cannot be a chance congeries of atoms. That Providence of the Almighty mind which cares for all creatures, must certainly be extended over man. His individual place in creation must be assigned by the fiat of his Judge, and his actions in this assigned sphere must be the object of special interest to that Being before whom not one of five little nestlings is forgotten.

In order to understand the mystery of the continuation of the species and the consequent introduction of each individual into its appointed place in creation, we must first have a clear notion of the species itself. As regards man, we have considered him as possessed of a threefold nature—“body, soul, and spirit.” Concerning the body we know that it is connected with, or even fabricated out of, the chemical elements of which we have cognizance by science. Concerning the *soul* we know nothing of the kind, and concerning the *spirit* still less. We are assured of the reality by philosophy rather than by science of ethereal existence, and we have reason to believe that we here touch only the boundary of a vast unknown.

* *Hamlet*, act ii.

Vast, certainly, for who can calculate the extent of that which must pervade everything, and reach to the remotest star. Unknown also, for we do not know what intimate relationship this may have with those essences of soul and spirit of which we ourselves consist; of which relations we are sometimes unpleasantly reminded in the changes of electric states.

It is life, and organization, and what we call "mind" that is the real mystery, rather than the continuation of these things in succeeding generations.

To illustrate what I mean from the vegetable creation, let us take a sprig from a sensitive plant, another from an herb exhibiting automatic movements, another from a tree having powerful effects on the animal economy. Allow these to grow, and we shall see them each develop the qualities of the original plant. Why? because of some difference in the oxygen, hydrogen, carbon, or nitrogen, of which they are shown by analysis *alike* to consist? Certainly not, for the most searching analysis can find no difference; but *something* has escaped us, and this the most important of all.

Of this "*something*" we know that it is essential to the organization, and yet that it does not reside in the chemical atoms of the organized body itself. It is not a cell nor a nucleus, nor anything else which we can define; neither is it dependent on circumstances.

"Atque hæc re nequeunt ex omnibus omnia gigni
Quod certis in rebus inest secreta facultas." *

The "*secreta facultas*" on which all this depends remains as unexplained as it was in the days of Lucretius.

These *essentiæ* may be so far combined as to follow the same lines of growth, and yet so far separate as to come out individually in their full and manifest distinctness.

Thus, in the *Cytisus Adami*, which was formed by a gardener who gave his name to the compound plant, different varieties of *Cytisus* are fused together. I have seen an old tree in a garden at Highgate which grew alternately or indifferently branches of three kinds of *Cytisus*—the kinds retaining all their peculiarity, both in the branching and inflorescence.

The reversion of one single branch in a tree, such as the fern-leaved beech, to the primitive and widely-differing normal

* Lucretius *de Rerum Natura*, lib. i. 173—175.

type, is a perplexing fact, baffling our powers of investigation. A similar remark may be made, in reference to a passage (page 90) in the recently-published work of Mr. Darwin, on the different forms of flowers. He says, "We plainly see that the two kinds of pollen and the two stigmas are widely dissimilar in their mutual reaction, the stigmas of each form being almost powerless on their own pollen, but causing; through some *mysterious* influence, apparently by simple contact (for I could detect no viscid secretion), the pollen-grains of the opposite form to protrude their tubes. It may be said that the two pollens and the two stigmas *mutually recognize each other* by some means." (The italics are mine.)

Here then are *mysteries* surpassing fable connected with the ordinary *life* of our common flowers,* and for the explanation of which no merely mechanical or merely chemical theory has ever been attempted to be offered.

Alike mysterious does it seem to me that the essential nature should be changed, as in hybrids, where we find the different forms not flowing together without mixing, as in the *Cytisus Adami*, but really united. The phenomena of the crossing of plants exhibit this intimate mixture. I will take an instance which I have myself examined. A cross between two species of *Cinchona* was produced in Java. I have described it as the *Calisaya Anglica*. In this case the fusion operated by the interference of the pollen between the two species, was strikingly complete in several respects of form, colour, &c., but most so, in a point of intimate organization, which we seldom have so good an opportunity of investigating.

Both the parents possessed specialities in the production of alkaloids, the cells of one elaborating Quinine, the other Cinchonine. When hybridized, the product was a mixture of the two. I suppose, therefore, that the chemical properties of *every cell* were altered by the interference of the pollen and the consequent cross fertilization. The supposition of an alternation of cells of different productive powers seems less probable.

The products derived from the crossing of animals are much more remarkable, especially in reference to the transference of the *vis insita*, and not only the corporeal characteristics, but also the dispositions and the mental characteristics of the parents.

The President of the British Association says, that, in the

* Compare the works of the elder Darwin.

statement which he has made, "of some of the more remarkable phenomena of organic production," it has been his object "mainly to show that they are all more or less closely related together by a chain of similarity of a very marked and unmistakable character; that, in their simplest forms, they are indeed, in so far as our powers of observation enable us to know them, identical; that, in the lower grades of animal and vegetable life, they are so similar, as to pass by insensible gradations into each other; and that, in the higher forms, while they diverge most widely in some of their aspects in the bodies belonging to the two great kingdoms of organic nature, and in the larger groups distinguishable within each of them, yet it is still possible, from the fundamental similarity of the phenomena, to trace in the transitional forms of all their varieties, one great general plan of organization."

His address aims at the advocacy of the doctrines of evolution, as alone suited to explain "the continuous series of gradations, as well as the consistent and general plan of organization." This, the President considers, "*must* have been the result of a gradual process of development, or of derivation one from another." But if, as I have shown before, Creation is looked upon as the result of the plan of one Almighty mind, the Logos or Word of God, we are at once furnished with the explanation of the general harmony, in the same sense as in criticism we can discern a unity of design and a recurrence of type in the works of any great poet, painter, or architect. We learn almost certainly to distinguish any peculiar style, not because one line is the *father* of another, but because the same formative mind models the whole. The general relations of the groups of metals and the arrangement of the elements in nature, are as remarkable instances of the ἀρχιτεχρονική φρόνησις of the Logos, as the relations of animated beings; and, in this case, there can be no possible question of "*evolution*" or "*derivation one from another.*"

The whole doctrine expounded in the address to which I have alluded is based upon the following statement:—"The germ constituting the basis of a new formation, whether it have the form of spore, seed, or ovum, is of the simplest kind of organization; and the process by which a new plant or animal is produced is necessarily one of gradual change and of advance from a simpler to a more complex form and structure; it is one of evolution, or, as I would rather name it, development."

This appears to me to be a misconception of the whole

subject, and the statement of that which is obviously incorrect. It is *life* that is the real mystery, and the continuation of this 'life may be effected in various ways. Some of these in the higher parts of creation are wonderful enough, but others so simple as to be seen under the microscope as "a process of cleavage or direct and visible division of the parent body."

Now, in the process of cleavage there is really no parent and no offspring; but one life becomes two lives by a process of division which goes forward under the eye of the observer; as if the entity were divided by the stricture of some invisible cincture pressing *from without*. In other cases the new entities are formed within the parental body, and take its place by multiplication rather than by division. In the vegetable kingdom, as is well known, individuals may be propagated to an indefinite extent by *cuttings*; which are quite analogous to the former mode; or by buds or bulbs, which fall of themselves and produce new plants, which is analogous to the second mode. When we come to reproduction by seeds in the vegetable tribe, we first meet with anything like the "advance from a simple to a more complex form." We have, in fact, the result of a *duality* destined to further development in the higher ranks of Creation; though existing in so rudimentary a character in the algæ and fungi, as to allow Dr. Thomson (strangely enough) to argue for an absence of specialization. But if the fusion of two masses of protoplasm is needful to the production of a new individual, it must be evident that there is a difference, though we may not be able to distinguish between the two.

This *duality* is, at last, exalted into sexuality, and the union of two sexes becomes ordinarily necessary for the continuance of the species; *ordinarily* but not *absolutely*, because we meet with the phenomenon of *parthenogenesis*, as in the *aphides*, which are capable of reproducing to the extent of many generations until the approach of winter renders it expedient that males should be formed.*

Gen. ii. represents not a new creation, but the "building" of the woman out of the man. It is the same nature, but moulded into harmony with a different organization—differently perfect, and yet perfectly different; so that the separate place of woman in Creation is not that of an inferior Adam, but that of Eve, the living one, rejoicing in maternity.

This difference of organization, and consequently of tastes

* For further particulars and details see Appendix C.

and pursuits, manifests itself as soon as the little ladies in a family become occupied with their dolls, and the romping young gentleman with his much-abused horse; showing us how intimately organization is connected with the whole being. All this, though faintly indicated at first, we must remember is carried to mature perfection by some unseen force involving the whole being in its influence.

What, then, are we to think about the transmission of this organization in the continuance of the species? Are we to rest satisfied with the *sesquipedalia verba* of science,* or may we not rather exercise our common sense and common habits of observation, and see what they teach us?

"Fortes creantur fortibus et bonis :
Est in juvenis, est in equis patrum
Virtus ; nec imbellem feroces
Progenerant aquilæ columbam."

Horace, Od. iv. 4.

We know that *like* produces *like*, and if the scientists can find no difference in the incipient beings, we must impute this to their deficient power of observation. The difference is and must be there from the commencement; it is not something superadded by evolution.

The variety in organization imprinted as above by the hand of the Creator carries with it, as we have seen, an entire differentiation of the whole being as to what we call mental and moral characteristics. To suppose that the feminine mind is the same as the masculine, is to evince a misapprehension of the whole subject—not unfrequently fatal in its results when it is supposed that it can bear equal strain with that endured without suffering by the stronger sex.

In order to realize the importance of organization let us suppose that the continuance of the species had been ordained to be by *parthenogenesis*, as among the aphides; we should then have had a world absolutely without variety, through the exact reproduction in every particular of the original type.

But in the world as now ordered we have the greatest variety of the *manifold* consistent with typical *unity*.

Thus, where *duality* is introduced, whether in the vegetable or animal creation, we find at once a tendency towards this *manifoldness* in creation.

In this continuation of the species by duality (or sexual

* For criticism of anatomical details see Appendix D.

propagation), each parent gives one half of the resulting being.*

Another source of variety is the dissimilarity of *race* amongst mankind. This is as great as can be deemed consistent with a common origin, and once markedly impressed seems to be almost imperishable. The resemblance of ancient types to their modern representatives has been abundantly illustrated by Cuvier and those who have succeeded him. I do not see how this differentiation can have been caused by external circumstances, as it penetrates so deeply into the physical structure. A white man will become dark-coloured by exposure to an African sun, but he would never acquire the peculiarities of a negro, and the descendants of white parents would perish from the torrid zone long before they could have acquired the peculiar skin and the specialities of organization suitable to such a climate.

Moreover, we find a vast variety of strongly-marked types amongst such a population as inhabit the British Isles, and there is, perhaps, no family of persons that can trace back their pedigree for many generations who must not be constrained to admit that some prevalent features of disposition or of mental constitution have been manifest in them from one generation to another.

This indestructibility of organization appears to me to be irreconcilable with the notions of evolution. The phenomenon of atavism, or recurrence to type, deserves especial study in this connection.

In fact, if there is anything which must strike an observer in the organized world it is the order and the constancy which we see reigning for ages. The cause of all this is simple and unique. If we could suppress infecundity between the species—suppose that the unions between wild species were in all senses and indefinitely fruitful, as they are among our doves and in our stables, what would happen? The barriers between species, between genera, would be taken away. Crossing would take place in all directions; everywhere would appear intermediate types; everywhere the actual distinctions would gradually become effaced and disappear. It is impossible to imagine where the confusion would stay its course. It would become a chaos of misformed creatures, such as the Babylonians dreamt of, and such as Lucretius described.

“Infecundity between species in the organic world has consequently as important a part as the force of gravity in the celestial world.. It maintains

* See Appendix E.

the zoological or botanical distance between species, as the latter maintains the physical distance between the heavenly bodies. All these have their perturbations, their unexplained phenomena. Do we on account of these doubt the great laws which hold in their place the smallest of the satellites as well as the largest of the suns? By no means. Can we on similar grounds deny the fact which secures the separation of the species nearest to each other as well as of the most distant groups? No more than in the previous case. In astronomy we should discard at once every hypothesis in opposition to the first, and although the complication of phenomena is much greater in botany and in zoology, a serious consideration of the subject will always lead to the rejection of every doctrine that is discordant with the second.

"Human art may produce results which seem at first not to yield to rules of hybridation. It has done so once, and may do so again. For all that, it has not changed the natural and general law, nor has it demonstrated that it is non-existent."—Quatrefage's *Etude sur le Transformisme*, Paris, 1870.

The same observations apply to past geological ages as well as to the present. All things being alike in other respects, fossil species are as well defined and as distinct as those of the present era.

Everything leads us to the conclusion that the laws of the organic world have not changed since the beginning. To admit the contrary is to oppose to all that we know concerning the present and the past of our globe, the possible, the unknown; or, in other words, hypothesis, having for its foundation our very ignorance.†

The study of Dr. Thomson's Address has unexpectedly revealed to me the weakness of the case of the Evolutionists in this, which I had supposed to be their chosen battle-ground—the more so as I find, from the President's own admission, that the recently deceased Von Baer refused to give his assent to the doctrines of evolution.

"Although Von Baer's researches, according to the light in which we may now view them, contributed in no small degree to the introduction of the newer views of the morphological relations of organic structure which have culminated in the theory of descent, yet he was unwilling to adopt the views of Darwin, and one of his latest writings, completed in the last year of his life, was in vigorous opposition to that doctrine."

So far, I quote from Dr. Thomson. I now turn for further information to a paper by G. Moquin-Tandon, "*De quelques Applications de l'Embryologie à la Classification méthodique des Animaux.*"* This able writer traces out the "Idée mère

* *Annales des Sciences Naturelles ; Zoologie*, 1874-5.

† See Appendix F.

de cette fameuse théorie de l'évolution," which, he tells us, had produced more than three hundred hypotheses. He then passes on to more modern discoveries and hypotheses, and to the memorable researches of Pander and De Baer, the latter of whom, in describing for the first time the egg of the mammals, in proving the existence of the ovarian cellule amongst all animals, impressed an entirely new aspect on embryology. And yet De Baer (if the same with Von Baer, as I suppose) was, as we see, no Evolutionist.

Agassiz (who also refused the fashionable doctrine) asserted that the discoveries of De Baer were the most beautiful that have been made in the natural sciences in modern times.

But the German "hyperDarwinist," Hæckel, comes forward with a new theory, according to which "the theory of types of Cuvier and of De Baer, which, during half a century and to our days, has formed the base of the zoological system, has become untenable* through the progress of *ontogenie*, and must yield to that phylogenetic classification of the animal kingdom of which the theory of the *Gastræa* forms the essential basis."

This promising young theory was to have demonstrated that all the different branches of the animal kingdom descend from only one unknown ancestral form, which *developed itself by spontaneous generation*, of which the organization was essentially the same as that of the *gastrula*. It is this form, long since extinct, which lived during the Laurentian period, and which M. Hæckel described under the name of *Gastræa*.

The very complete analysis of this theory by Moquin-Tandon leads to certain conclusions, of which it is sufficient for me to quote as epitaph:—

"The hypothesis of the *Gastræa* as the ancestral form common to all animals with the exception of the Protozoa, rests on NO FUNDAMENTAL FACT, and cannot serve as a basis for a phylogenetic classification." This theory was concocted in Germany; it is defunct in France, and entombed in the "Annales" from which I quote, but will probably be galvanized into life in England, as the place of its birth will give it to some minds an imperishable charm. It constitutes the basis of a not inconsiderable section of Dr. Thomson's Address, and though he has the modesty to acknowledge that the *Gastræa* theory is not quite proven, he leaves us under the impression that it is a most promising tentative experiment, so that "we are at least in the track

* I. c., p. 14.

which may lead to a consistent view of the relations subsisting between the ontogenetic, or individual, and the phylogenetic, or race history of the formation of animals and of man."

Haeckel is, of course, canonized by the President as "one of the ablest and keenest supporters of the modern doctrine." As to Moquin-Tandon, he is a Frenchman, and not an evolutionist, so that his refutation is not even alluded to!

From the obituary notice of the celebrated Agassiz, published in the Proceedings of the Royal Society,* I learn that his *Essay on Classification* was his crowning work. "The erudition displayed in this work is remarkable, and the grasp of facts, intricate and numerous in their relations, is quite amazing. In nothing is this better exhibited than in his celebrated demonstration of embryological, geological, and zoological succession."

And with all this profound knowledge of the subject, "*Agassiz was much opposed to the theories of Darwin.*" At the time of his death he was engaged in the discussion of the "Evolution of Types."

With such leaders as Von Baer and Agassiz, we who know nothing of anatomy may safely rest content; declining to partake in the unsettlement of mind as to the doctrines of Creation which it seems the special object of some very inferior scientists to effect. The labours of these latter will no doubt be welcomed by many on account of their tendency; but, on the other hand, will be ultimately appreciated at their real value by those who adhere to the faith of their fathers. The present state of English science, *itself being judge*, is not so flourishing that it can lightly invoke the ostracism of all right-minded persons. The British Association has to renew a slightly fading reputation, and to convince the world that it meets for some nobler purpose than is aimed at by its President's Address.

Conclusion.

The believer in revelation is provided with a cause for phenomena, which, when once admitted, will explain all difficulties. The world-old belief in the Being and Existence of God as the Great Cause and End of all creation, and as the Sustainer of all that He has created, supplies a key that will fit all the wards of the lock. On the other hand, the advocates of materialism must not plead that they are honest in searching

* *Proceedings of the Royal Society*, vol. xxv., No. 176.

after truth, and that they alone are capable of impartial investigation.

An "Inaugural Address" * has been courteously sent me by the author, from which I extract the following sentence:—

"The thought of the continual presence of God is also, as in the small affairs of life, too heavy for man to bear, and troubles his intellect even in special scientific investigations."

The desire to get rid of the thought of the continual presence of God thus furnishes a most powerful motive to view things in a certain light, and to represent this view of things as established science, disregarding all proof to the contrary. So I read in a paper in the *Quarterly Journal of Science* for October, 1877, as follows:—"We have no longer at the present day to concern ourselves with establishing the Evolution hypothesis. Almost all those who are in a position to form a judgment are agreed in accepting it." (!)

This will also account for the zeal displayed in the dissemination of these doctrines amid the masses of the people under the venerated name of Science. Amongst these persons there are always to be found a more than sufficient number, who, for their own reasons, will applaud any teacher that will help them to get rid of the idea of the presence of God. Such Professors will no doubt be rewarded by the popularity at which they aim.

Science itself, thus misused, suffers in her turn. I read in the *Quarterly Journal of Science*:—

"An opinion is rapidly gaining ground that the present scientific position of Britain is unsatisfactory, both as compared with that of certain foreign nations and with our own antecedents, and is consistent neither with the honour nor the true interests of the Empire." †

The review proceeds to show, that "in *speculative philosophy* we have reconquered the foremost place"; but "what we complain of then relates not to the height of our *scientific ideas*, but to the quantity of our *scientific work*, and the number of our earnest and scientific workers. . . . Let us look at our scientific literature. It is exceedingly rich in the mere number of books published, but what an overwhelming portion of them, as every reviewer knows to his sorrow, are mere compilations, elementary treatises, and the like, well-

* "Is Scientific Materialism compatible with Dogmatic Theology?" The inaugural address delivered before the Literary and Philosophical Society of Liverpool, 14th October, 1877, by John Drysdale, M.D.

† *Quarterly Journal of Science*, p. 467, Oct. 1876.

known matter brought forward again and again, in a slightly modified form. How many of the original works even are *original in little save absurdity*, and consist in wild attempts to *subvert the whole existing system of our knowledge, and rebuild it as if by magic.*" (!)

The conclusion to which I am brought by a careful review of the whole subject is that, as regards man and his place in Nature, science has no basis at her command on which to rear any solid and substantial truth. She can only look at the outside of things, and judge by the evidence of the senses. Where this evidence fails her, she may resort to *guesses at truth*, but in so doing, abandons her own proper line of inductive reasoning from proved and acknowledged facts, and substitutes the perilous efforts of philosophy. *Perilous* certainly, because a strong *a priori* bias on such subjects is unavoidable, and the love of truth, and consequently real philosophy, gives way before the overmastering desire of proving the wished-for consummation.

I do not quite agree with the reviewer, to whom we have been listening, in the assertion that nationally we have conquered the first place in "speculative philosophy." Probably the German mind is still in advance of the English, and one evidence of this may perhaps be found in the decline of the influence of the doctrines of Darwin in that quarter.* I do not say that anything better is substituted in its place, for, as a disciple of Haeckel, quoted (*with disapprobation*) by Dr. Drysdale, says, "You must deny God and trample the cross under foot before you can become even a scholar, far less a master in natural science."†

This is outspoken language, and gives some notion of the abyss towards which our Evolutionists are, with what they think excellent intentions, *timidly* leading the way.

The result of *unsettlement*, such as is caused by the dreams of our scientists, may be studied by all in the scenes of the French Revolution of the past century, which *may* be, in time, forgotten in comparison with scenes yet to come in this nineteenth century, if Evolutionist teaching is to prevail. All society is based upon the recognition of the government of God. Man's special place in creation is ordered and appointed by the God who made him. Every individual child of Adam is *not* a chance production, but is truly formed as the handiwork of God, who is ever acting, and is, indeed,

* See Appendix G.

† *Häkelogonie, ein akademische Protest gegen Häckel's Anthropogenie*, von Prof. Fr. Michelis. Bonn, 2nd edit., 1876.

the sole source of all action in His creation, for "*in Him we live and move, and have our being* (*Τοῦ γὰρ καὶ γένος ἐσμέν*), for we are also His offspring." Compare the instruction in the 139th Psalm.

Hence man's duty to be content with the arrangements of God in society, and subject to those whom God has set over him. Hence the guilt of self-murder, and the command that whosoever sheddeth man's blood, by man shall his blood be shed.

In the providential dispensations, *man* is appointed in the place of God as magistrate or judge to care for the honour of the God whom he serves. Hence there is reflected upon him something of the glory of Elohim, as in the 22nd Psalm, "God standeth in the congregation of the mighty; He judgeth among the Elohim."

So that God associates man with Himself in the administration of justice. Man is to be the destroyer of his fellow-man when he violates God's laws, for the magistrate beareth not the sword in vain. This shows God's watchful care for His own glory, and for the good of His creatures, as the basis of civil government.

There seems to be a clear intimation in Scripture of the character of anti-Christian effort to set aside all rule and authority, to overthrow the sanctity of marriage, and to introduce universal licentiousness. The "dreamers" are denounced in Jude as bringing in this threefold mischief* (v. 8): οὗτοι ἐνυπνιαζόμενοι σάρκα μὲν μιλῶνσι, κυρίότητα δὲ ἀθετοῦσι, δόξας δὲ βλασφημοῦσιν.

The dream of Evolution in so far coincides with the dreams of the Gnostics, the Nicolaitanes,† and others, as it tends to destroy in the conscience of mankind all thought of the sacredness of human life, and of the dignity of man's position in Creation. Although the teachers may not intend this, it is certain their scholars in the masses of mankind will, unless restrained by the civil power, carry out in practice a state of things similar to that described above. Why, then, proceed with their self-chosen occupation of unsettling the minds of the multitude, and destroying the old belief in Creation and Providence, giving us nothing in return but a mechanical self-evolving universe, presided over by blind fate!

* See Smith's *Dic. of the Bible*,—*Nicholas, Nicolaitanes*.

† If this trinity of evil be indeed worthy to be established, let homage be paid unto it; but, if otherwise, let us not become heathens by inadvertence, and worshippers of a three-faced Baal under new disguises.

I can see no benefit in the attempt to propitiate such teachers. In my opinion, those who value the truth should take a bolder course, and show the inseparable connection between *false science, false religion, and false morality*.

I have endeavoured to lay before the Institute, as both a Religious and Philosophical Society, subjects requiring *thoughtful consideration* and bearing with increasing pressure on the interests of religious truth. It has not appeared to me either becoming or proper to adopt the style of lecturing, which I have objected to at the commencement. Rather would I continue a student amongst reverent students of the works of God, satisfied that shallow dogmatism will not meet the need of the Church in the coming age; neither will it avail the chosen people "to go down to the Philistines to sharpen every man his axe," but rather to learn for themselves how to fashion the best weapons of war, and to recover that supremacy in the regions of philosophic thought possessed of old time by the church of God.

I conclude with an extract from the letter of a scientific friend, presenting a chapter from the ever fresh and ever varied records of Providential care over man.

"You have read Mungo Park's story about finding the moss in the desert when he had lost his way, and fell down exhausted, expecting to die. The same accident happened to my brother-in-law. During one of those sudden storms which occur in the Andes, he and the guides lost their way, and, separating in different directions, my friend became at last so exhausted that he sunk to the ground, never expecting to rise again. A couple of condors were hovering over him, waiting till they saw life extinct, or nearly so, before they attacked the body. He had had no food since the previous day, as the *puna* or mountain sickness had been on him, and now was so faint he could not move. When lying on the ground, he observed a small snail-shell, the animal of which was moving slowly along the parched ground. He remembered my love for shells; he thought of the incident to Park. Still lying on the ground, he collected as many of the snail-shells as he could, thought of the watchful Providence which protected them, was inspired with new strength, made a fresh effort, and in half an hour arrived at a small village, where he received every attention."

"O Lord, Thou preservest man and beast! How excellent is Thy loving-kindness, O God! Therefore the sons of men put their trust under *the shadow of Thy wings*."

APPENDIX.

(A. p. 197.)

"When old beech-trees are cleared away, the naked ground, in a year or two, becomes covered with strawberry plants, the seeds of which must have lain in the ground for an age at least."—White's *Natural History of Selborne*, edition of 1875, p. 361.

(B. p. 200.)*

It is worth notice that this destroyer, "the Sardanapalus of the Greeks," was himself destroyed, and himself the instrument of his own destruction—and that by fire.

This last king of Assyria, "who ruled over an empire stretching from Egypt and Lydia on the west, to Media and Persia on the east," "finding his city was taken, made a pile of all his valuables in the palace, and setting fire to it, perished in the flames."

(C. p. 219.)

Pendant toute la partie chaude de l'année, c'est à dire depuis le printemps jusqu'à l'arrière saison, les pucerons se multiplient exclusivement en mettant en monde des petits vivants, sans l'intervention d'aucun individu mâle, mais à l'approche de la saison froide, ils rentrent dans les conditions ordinaires, et se propagent par l'intermédiaire d'individus sexués comme les autres insectes. Les femelles, fécondées par les mâles, pondent des œufs qui passent l'hiver et n'éclorent qu'au printemps. Ces œufs donnent naissance à de nouvelles générations vivipares, qui se succèdent sans interruption jusqu'en automne, pour être remplacées à leur tour par d'autres pucerons, porteurs de sexe, lesquels terminent et recommencent tout à la fois le cycle reproducteur de l'espèce.†

(D. p. 220.)

With all the attempts to represent matter as self-evolving, it is *inexplicable why* the segmentation of the germ should occur, *why* the whole germinal disk should be afterwards divided; *why* the cross clefts should occur on each side of the mural cavity forming the protovertebra of embryologists; *why* the vertebral column should be formed, and so forth. No powers exist in brute matter sufficient to account for these things; no processes of crystallization have the least affinity with these varied developments. We could as reasonably expect a mass of "nitrogenous

* *Assyrian Discoveries*, pp. 11, 93, 94.

† Balbiani, *Mém. sur la Génération des Aphides*, Science Nat. Zoologie, 1862.

hydrocarbon compound" to produce a watch as to exhibit these formative powers, and this is, indeed, a very feeble expression of the impossibility.

I find in *Nature** the following passage, which presents before us the most recent aspect of the "struggle for life" amongst the theories—"the brood of folly without father bred"—which succeed each other like froth on the waves of time.

"He (Auerbach) tries to controvert the statements of Strasburger, and sums up thus :—1. The longitudinally striated body, in the interior of the cell, is not the 'nucleus,' but the middle part of the so-called 'Karyolitic figure,' and therefore a product of the *mixing of the special substance of the nucleus with the surrounding protoplasm*; and 2, that the young nuclei do not develop by the fission of the mother nucleus."

From this I learn that the *nucleus* theory is insufficient, and that the *protoplasmic* explanation is devoid of all real foundation, since the special substance of the nucleus, which no doubt plays an important part, is *different from protoplasm*, and the two require to be *mixed*.

And, moreover, how does the existence and coalescence of these two hyaline globules consist with the doctrine, that "the germinal element consists of a simple primordial cell"? As stated near the close of this lecture, "the formative or organizing *property* resides in the living substance of every organized cell, and in each of its component molecules"! The formative or organizing property resides in every cell, and also in every molecule *complete—of course in each*, or the statement has no meaning. Now, I know not how many cells there are in the ovum of a mammal, but, according to a calculation made by Mr. Sorby, the number of molecules in the germinal vesicle of the mammalian ovum is such, that if one molecule were to be lost in every second of time, the whole would not be exhausted in 17 years. Every one of these has attached to it the formative property, requiring only the *materia* to produce the number of animals above stated, say about 31,500,000 multiplied by 17.

Certainly, the molecules, or atoms—plain oxygen, hydrogen, nitrogen, and carbon must be greatly surprised at this sudden accession to their powers—properties conferred upon them, not by their creation, but suddenly, by the fertilization of the ovum, and liable to be as suddenly withdrawn, if anything should happen to the structure which they compose. We are not informed what *then* becomes of all these vast and varied attributes of the atoms, which "explain, in the most materialistic fashion, the *transmission of the organic and other properties* and resemblances between the parent and offspring."

On behalf of these atoms, and of what we call chemistry, in which we suppose that we have learned something about their nature, I must protest against the thoroughly unscientific way in which they are treated in the above statements.

* September 20, 1877. *Review of Biology of Plants.*

It is clear that as yet we know nothing, and can know nothing, of the commencement of life. All our knowledge is of results, and not of causes ; organization begins from the invisible and intangible world, and not from some imagined "protoplasm."

There is a fund of good sense and good feeling in the female members of the community to which I can appeal in the present argument. These know that if the "scientists" could succeed in constructing a Frankenstein, or man-machine, consisting entirely of atoms of oxygen, hydrogen, nitrogen, and carbon, together with phosphorus and certain earths and metals, plus eighty per cent. of water, the only feelings excited by such an apparition would be of curiosity perhaps, but of unmingled horror and disgust. The mother delights to see in her babe the reproduction of the very being she admires, and knows that her offspring will inherit the essential nature of its parents. As this nature cannot be shown to be entirely materialistic, she will be slow to credit the materialistic theories referred to.

There is a whole world of thought connected with the Third of Genesis, on subjects which science is bound to explain, but which it simply stumbles over, as it does indeed over others in the preceding chapters ; as, for instance, over the question—how the species could be continued whilst in the course of ages the sexes were being "differentiated" one from the other ? Some of these points indicate, in a way not to be mistaken, that man is a special creation, and wholly different to the beasts of the field.

(E. p. 221.)

The halves being respectively A, the whole nutritive system, comprising the observing faculties, the anterior part of the head, the osseous part of the face, the forms of the organs of sense, and the tone of the voice ; and B, the whole locomotive system, naturally connected with the cerebel, or organ of will, the posterior part of the head, the few more movable parts of the face, as the external ear, under lip, lower part of the nose, eyebrows, and the external forms of the body, in so far as they depend on the muscles, as well as the forms of the limbs, even to the fingers, toe-nails, &c. ; also probably the skin and its appendages.

Either parent may give either series A or B. The consequence is that no child is exactly like either father or mother ; thus, if a child is said exactly to resemble the father from the series A, the probability is that the dispositions will be those of the mother, who will have communicated the series B.

Common observation, whether in reference to animals or to the human race, will sufficiently confirm the above in its leading details, which I take from Walker on "Intermarriage," and which conspicuously illustrate the pleasing variety which meets our view in Nature. Another provision, tending to the same end, is the constant crossing over of peculiarities of one

generation to the opposite sex ; thus the daughters of a clever man usually partake of the superiority of their sire, and the marked influence of a superior mother on the boys is, I suppose, universally admitted, though in this case it is difficult to distinguish between what may be due to nature and what to education. The frequent resemblance of sons to their maternal uncles has been recognized for ages.

(F. p. 222.)

From the Rev. F. O. MORRIS, celebrated for his works on Ornithology.

"How any persons can ever have brought themselves to adduce in support of a preconceived theory the most extravagant idea that the exterior forms or appearance of (so-called) species of birds have been produced by the admiration of males for females, or *vice versa*, does seem to me one of the most astounding notions that has ever been promulgated ; nay, as put forth, it appears, in the work under your review, even parts of the species, as, *e.g.*, parts of the wings of butterflies.

"You have mentioned some eminent names who have pronounced against this doctrine, and you might have added to them Dr. Carruthers as a botanist, and of Mr. Davidson as a geologist. Davidson says : 'Year after year has passed away without my being able to trace the descent with modifications among the Brachiopoda which the Darwinian doctrine requires' ; and Dr. Carruthers, that 'no single case of evolution of one species from another has come within the observation of man.'

"Dr. Allen Thomson states in his address that it requires a practised eye to distinguish between the embryos of animals, birds, and reptiles, in the earliest stages of their existence. What is this but to admit that in these earlier stages of their existence there is a 'distinction and a difference' between them, and that it is distinguishable ?

"And yet again, Darwin, as all the world knows, has never yet been able to produce or point to any one single existing creature of any kind in the act of evolution from one species to another ; and that for the best of all possible reasons. Nor has he been able to do so in the case of the creatures that have so long been extinct ; no, not a single one in any of the inconceivably vast *æons* of time he is obliged to invent to build his baseless theory on.

"Even so it is with the embryos of them. Can Dr. Allen Thomson show us any one of their embryos in any such transitional state ? I trow not ; not one does he, because not one can he."—*A Guard against the "Guardian."*

Review of "*Der Darwinismus*, by Dr. ALBERT WIGAND, 1875-77."

From *The Academy*, August 25th, 1877.

"In the second part Dr. Wigand leaves the narrow ground of natural science, and criticises Darwinism from a general and philosophical point of view. The theory is said to be no legitimate hypothesis, since it fails to

satisfy the five following essentials—(1) that the cause assigned be a *vera causa*; (2) that it be verifiable; (3) that the facts explained do not admit of being accounted for by other causes; (4) that it cannot be seen to lead to other consequences just as well as the actual facts; and (5) that it tend to further our knowledge of the unity of nature. The theory is thus essentially unscientific, and Dr. Wigand goes on to characterize it as a return to the method of speculation of Schelling (in his *Natur-philosophie*) and Geoffroy St. Hilaire, which consists in the attempt to deduce the complex and varied phenomena of nature from a few general ideas and principles, instead of gradually ascending to general laws by induction. But, again, Darwinism is no less false as philosophy than as science. All attempts to reach a theoretic unity in nature, whether by reducing all forces to one fundamental force, or by bringing all processes and effects under one universal law of causation, are destined to failure. Such attempts overlook the limits of our knowledge. Nature is made up of individual bodies with qualitatively unlike materials, forces, forms, and functions, and the universal laws of force are wholly inadequate to explain these complex existences. So, too, even though the processes of organic development invariably illustrate the law of cause and effect, we are for ever precluded from knowing how these intricate combinations and changes have been brought about. The question of the origin of species and of life is thus an insoluble one. Our author concludes his second part by seeking to re-affirm the inadequacy of all mechanical conceptions of the world and the necessity of assuming a personal intelligence as the source of universal law and of purpose in nature."

(G. p. 226.)

DARWINISM IN GERMANY.

Times Newspaper, 1877.

"The extraordinary success of the Darwinian doctrine in Germany may be traced to two causes. Science admired the conscientious accuracy displayed by Mr. Darwin in investigating the propagation of existing organisms, and the theorizing propensity of the German mind jumped at conclusions concerning the origin and primary production of animal life. While professors approved the laborious method pursued by the patient investigator of nature, the boldest inferences were regarded as reasonable and true by more speculative spirits when drawn from well-ascertained facts.

"Nor did the numerous metaphysicians native to the soil suffer the new theory to remain confined to the physical world. If animated bodies could be evolved from the slime of the sea, the power of motion and sensibility instinct in them seemed to differ from the human soul in degree rather than in kind. If a combination of chymical elements produced the rudimentary intellect of medusa and polyp, it was considered a rational inference that a compound of nobler ingredients sufficed to make up the thinking apparatus of *Animal Homo*.

"The chain of inferences did not come to an end even with this apparent climax. This terrestrial sphere, with its varied contents, having been duly accounted for by the progressive hypothesis of the novel lore, the transcendental was confidently taken in hand. Suppose the human soul to be carbon with a slight admixture of phosphor and a delicate flavouring of oxygen, the final result obtruded itself—that He in whose image the ancestors of modern philosophers believed men to have been created was no more than an aggregate of automatic forces. Though these extreme views were not universally adopted even by latitudinarians, still they found many disciples, and here and there an apostle.

"At this year's autumnal meeting of the German natural philosophers at Munich, a succinct account of this theory was given with considerable gusto by Dr. Haeckel, the Jena Professor of Zoology, and an eminent representative of extreme Darwinism in this country. A few of his remarks will suitably supplement what has been said. Having contended that the Biblical account of this planet's creation has long been demolished by geology, Herr Haeckel wondered that morphology should have been so slow to come forward and explain the origin and diversity of the animal world. According to him, the two principles of inheritance and adaptation explain the development of the manifold existing organisms from a single organic cell; while, were further argument needed to disprove supernatural intervention, we have only to turn to the frequent occurrence of undeveloped and useless organs in many types of the animal world to realize the truth. In this way the Creator is disposed of, not only as superfluous, but as a being who, if He existed, instead of being all-wise, would every now and then have committed the indiscretion of attempting to create eyes and wings which His power did not suffice to perfect. Then, passing on to the omnipotent cell, constituting the groundwork of animal bodies, he referred his audience to certain zoological inquiries proving the possession of motion and sensibility, of perception and will, even by those primary organisms consisting of but a single cell.

"Everything being thus dependent upon the cell, the lecturer at this stage became interested in the matter forming this marvellous organism. The cell, then, consists of matter called protoplasm, composed chiefly of carbon, with an admixture of hydrogen, oxygen, nitrogen, and sulphur. These component parts, properly united, produce body and soul of the animated world, and, suitably nursed, become man. With this simple argument the mystery of the universe is explained, the Divinity annulled, and a new era of infinite knowledge ushered in. It was a fitting conclusion to such a scientific *pronunciamiento* that the lecturer, who regarded his argument as incontrovertible, insisted that it should be taught in every school of the land. In a previous part of his speech he had certainly admitted that the theory of organic evolution could not be experimentally proved; but as he asserted in the same breath that no such demonstration was required, and that the facts observed enabled any one in his senses to draw the crowning inferences, this deficiency had nothing in it to shake his assurance.

"When this confession was uttered before the assembled professors and other aiders and abettors of the Muses, a shudder seems to have passed through the august conclave. The meeting, being the 50th since the institution of these annual assemblies, had a more solemn character than usually belongs to scientific gatherings. The extreme bias of the views expounded formed too marked a contrast to the lofty tone that pervaded the assembly to be ignored by the more moderate elements present. It was felt that, sceptically inclined as the nation and its learned professors might be, the majority were hardly disposed to adopt the materialist philosophy recommended to them as the only teaching consistent with the rational enlightenment of the times. It was perceived, too, that Herr Haeckel being too famous a man to be pushed aside, those of the audience who dissented had better announce their scruples, lest science should be led astray by the eccentricity of some and get into evil repute by the silence of others. It was one thing to tolerate and half approve the avowal of the like extravagant notions in ponderous volumes or scientific essays, comparatively removed from public ken; it was another to allow them to pass uncontradicted at a representative meeting, the observed of all observers. The bow had been too highly strung, and reaction was the consequence.

"Four days after the promulgation of Herr Haeckel's views, Dr. Virchow, the celebrated professor of pathology at Berlin, ascended the speaker's tribune to couch a protest against the sentiments enunciated by his learned friend. He began by reminding his hearers of past persecutions, with which he contrasted the liberty now allowed to every branch of science in Germany. Scholars, he went on, to render themselves worthy of the license given them in what they communicated to the world, should carefully distinguish between ascertained facts and the vast sea of conjecture, bordering upon the narrow strip of scientific *terra firma*. Facts should be taught; conjecture, if communicated at all to those still studying the rudiments, should be mentioned as conjecture. Were a different method pursued, science would run the risk of being misled, and, moreover, might fall into disrepute and have its freedom curtailed by those in power. Now he contended that the production of the first organism out of inorganic matter had never been proved; that the manner in which certain chymical elements were alleged to grow into a soul was incomprehensible to unprejudiced investigators; and that the connexion between monkey and man, let alone between crab and man, was unintelligible to those zoologists content to argue from what came under their observation. To elucidate these propositions, the learned professor imparted a variety of instructive details, strikingly grouped and wittily put, which those specially interested in the subject may read for themselves in his printed essay '*Die Freiheit der Wissenschaft*.' The conclusion he arrived at requires to be clearly stated. He said:—

"To be sure, if I do not believe in a Creator who breathed life into a clod of earth, I am compelled to assume the production of the organic

world by *generatio æquivoca*. *Tertium non datur*. If a man is at all anxious to settle the question of the world's origin, his only choice lies between these two alternatives.'

This is evidently intended to eliminate the question and represent it as comparatively indifferent.

"This declaration, coming from such a man as Professor Virchow, made no little noise in German lands. The great pathologist being considered a luminary in natural science, opposed to every species of orthodoxy and altogether innocent of faith, the cautious distinction he drew between fact and conjecture went far to convince the uninitiated that the production of man in the chymist's retort was not likely to be recorded among the discoveries of the age. The cold water the Professor dashed into the face of these vain imaginings has sobered public opinion and contributed to a wholesome reaction. Still, much is left unsaid in his speech which, in the opinion of those interested in the paramount question he declines to enter upon, ought to have been emphasized. The Professor, for instance, might have told us that even if Carbon and Co. had ever been observed to produce an organism, the atheists' argument that this proves the absence of a Creator would still be a rash and irrational presumption. By those inquiring into the cause of the surrounding phenomena the question in this case would have been asked, Who gave the chymical elements the power to produce life, if not a Creator? It is true that those who consider the question no concern of theirs will refrain from putting it; but if rationalists are driven to confess that the only alternative of man lies between acknowledging a Creator or shirking the subject, the advent of a crisis in the history of disbelief is announced by the leaders of the movement themselves. A dim notion of coming intellectual revulsion is pervading Germany at this moment."

A discussion of a general character ensued, in which the following took part: Rev. J. Fisher, D.D.; D. Howard, Esq., F.C.S.; Rev. Preb. Row; L. Dibdin, Esq.; and the Chairman; the Author having replied,

The meeting was then adjourned.

REMARKS UPON THE FOREGOING PAPER BY MR. JOHN WALTER LEA.

Heartily accepting the "philosophy" of the short paragraph on p. 194 of Mr. Howard's most interesting paper, I think he has been scarcely careful enough in his use of the terms "evolution" and "evolutionists" to make it clear that he is speaking of the materialistic school only, and that with the Christian evolutionist, who believes with full faith in Creation and Providence, he has, here at least, no quarrel. If, however, he believes that Haeckelism is the only consistent doctrine of evolution, I venture to think

that so grave a position ought not to have been tacitly assumed. Mr. Howard also puts together Prof. Allen Thomson, Lamarck, Wallace, and Darwin, as advocates of "these doctrines," whereas their doctrines are not identical, nor do they all necessarily make "Creation give way to evolution."

"If life," says Mr. Howard, "can only proceed from life, the whole doctrine of evolution falls at the very commencement" (page 192). Here we certainly need the qualifying word "materialistic," for the Christian sees no difficulty. Evolution necessarily postulates a starting-point, and for the Christian (or even the Theist), that starting-point is the living God. Non-Theistic evolutionists, like Tyndall, are worse off, granting Mr. Howard's "if"; but they do not go quite so far; only saying that there is no *evidence* of the present evolution of the living from the non-living; they do not affirm that it *cannot* be even now. When, however, they assert that it was so once, their own practical science is their most formidable foe.

Mr. Howard cannot really misapprehend the meaning of the phrase, "the survival of the fittest," but he certainly seems to me to misrepresent it, as though "the fittest" meant the highest or noblest, instead of merely the one most fitted to succeed under given circumstances. The "universal prevalence of destroyers" does not discredit the doctrine,—rather the reverse. They destroy those least able to destroy or to escape them; those, that is, who on common ground meet them at a disadvantage. A cat destroys a garden-warbler; Mr. Howard asks, "Is the cat more fit to survive?" Not, perhaps, more "fit," but more fitted, under the conditions of the case. Change the conditions a little; let the cat's only chance of life lie in catching the bird; let the warbler be a little more on the alert, or a little quicker in its movements: it escapes, the cat dies. Under these circumstances the bird is most "fitted to survive," and survives accordingly.

In fact, Mr. Howard, in the next page, in forcible and eloquent language, teaches the same doctrine:—"There is no mercy in the ordinary course of nature. Her language is woe to the weak and to the miserable." "As soon as health and strength decline, numberless destroyers seize upon their prey." "Nature is concerned for the perfection and continuance of the race rather than of the individual. . . . It is obviously an advantage that the strongest should survive." What is this but "the survival of the fittest"? "But what," adds Mr. Howard, "are we to say about the defeated?" That they do not survive because they are not so fitted. The weakest go to the wall.—*Va victis!*

I entirely agree with Mr. Howard, that the special distinction which differentiates man from the lower animals lies in his "pneumatic nature." But it is not so clear that on this ground "he *must* have required a separate act of creation" (p. 211). Surely it were enough for the *necessities* of the case if the *πνεῦμα* were separately created, the body and soul being derived from existing forms, with such modifications as it might please God to ordain. There is nothing contrary to either Creation or Providence in believing that God might as readily, and, to speak reverently, as fittingly, have added

special qualities to the ordinary product of hereditary transmission as have created an entirely new creature, to a very great extent on an existing model. The hereditary descent (to which Mr. Howard refers) of not only physical, but mental and moral qualities, seems to me a strong argument for the view that we derive our *whole* nature, and not our material elements only, from our parents.

Materialistic evolution has no more resolute opponent than Dr. Lionel Beale; yet the doctrine of vitality maintained in his many works appears to be, and I believe really is, wide enough to cover not only the derivation of πνεῦμα from ψυχή, but the whole field of a strictly Christian evolution.

Mr. Howard (p. 216) regards the unity of plan in the Creator's mind as a sufficient explanation of the unity manifested in His creation, without having recourse to any ideas of "derivation." Doubtless it is sufficient on the theory of "special creations," since the Divine Designer must adhere to His own design. But surely it is equally consistent with the theory of the execution of that same design through "derivative creation." Which theory is the more probable must be settled hereafter by patient observation and careful induction. This only (as Mr. Howard would be among the first to allow), and not the set of the popular current, nor even the authority of great names, must ultimately decide. But as Mr. Howard has laid just stress on the convictions of such men as Agassiz and Von Baer, I may observe that an increasing preponderance of eminent biologists are accepting the doctrine of evolution in some form or other. And many of these and of their humbler allies would say, I believe, as was said by Charles Kingsley, that it has "opened a new world to" them, "and made all that" they see around them "if possible even more full of divine significance than before."—(*Memorials of Charles Kingsley*, vol. ii. p. 156.)

REPLY BY MR. HOWARD.

I feel indebted to Mr. Lea for the opportunity he has afforded me of giving some explanation of my views of "Christian evolutionism." The enforced brevity of this reply may render it in some respects unsatisfactory; but it will not, I trust, be found wanting in courtesy to those who hold this modified doctrine, and whom I know well how to distinguish from the materialists of Haeckel's school.

I may assume without offence that the ideas received by a number of Christian men are not, *necessarily*, *Christian ideas*. To solve this question we must refer to the common standard of Christian truth in the Scriptures. Otherwise there is no certainty that novel views, "opening a new world" to the recipient, may not prove as injurious as the heresies that have infested the Church in all ages, and which have always come in with the boast of superior illumination; the Gnostics rejoicing in light and consolation which the more conservative portion of the Church might gladly have shared if they had not feared to desert the old "wells of salvation."

maintain then, that there is *really* but one doctrine of evolution, and that, as I have sought to show, this is essentially atheistic, or rather *pantheistic*; that it may be in part held by Christians, but is no part of Christianity. "Evolution," according to Mr. Lea, "necessarily postulates a starting-point." This starting-point, *according to the Scriptures*, being a miracle of the most stupendous magnitude, and, in the case of man, of the most wonderful proportions. "The first man, Adam, was made a living soul." * He was created at once *perfect* and the head of all the human race. "In Adam *all* die," they all share in the results of his transgression. There can be no Christianity where this is denied; and the truly affecting and consoling portion of the burial service to which I have referred loses all meaning to the mourners, who so generally in this country find a source of consolation in the words of Scripture there quoted. All hope in "the last Adam" is gone.

This creation of Adam was accomplished, according to the Scriptures (which Christ declared cannot be broken) in a manner most inconceivable and objectionable in the view of science; in fact, only to be received by faith. Jehovah Elohim formed man out of the *dust of the ground* (not out of a previously existing ape) and *breathed into his nostrils the breath of life*, and man became a living soul." This is not "*derivative creation*," but it is all we have to rest upon—*this or nothing!* As to speculations concerning what God *might fittingly* have done, I look upon them as more suited to some other place where time could not be unprofitably wasted.

"Others apart sat on a hill, retired
In thoughts more elevate, and reasoned high
Of Providence, Foreknowledge, Will, and Fate,
And found no end, in wandering mazes lost."[†]

If the Old Testament in Genesis, and the New in 1st Corinthians, hold good, there is no question that man is a special creation. A continually developing mollusk or an improving baboon could not stand at the head of the human family, involving all mankind in the consequences of its [his ?] actions.

As regards the rest of creation, we are not told in what manner to explain the expressions—"Let the waters bring forth abundantly"; "Let the earth bring forth the living creature." I freely confess I have no conception *how* this could take place, and that I only receive the notion as an article of faith. I am elsewhere told[‡] of "quaternary compounds," assumed to be transparent, since they have never been seen, consisting of eight atoms of carbonic acid, six atoms of water, and one of nitrogen, which somehow have the gift of coming to life.§ In these, if

* 1 Cor. xv. 45.

† *Paradise Lost*, Book ii., l. 557, &c.

‡ *Physical Life*, by A. Buchanan, M.D., President of the Faculty of Physicians and Surgeons of Glasgow, and one of the Vice-Presidents of the Glasgow Philosophical Society (page 34).

§ These are natural constituents of the atmospheric air, which, on being diffused through water, combine with the mineral matter which the water holds in solution, and so (!) form an *exoplasm* which assumes the organic form, correspondent to its chemical constitution.

they were not *intangible, imperceptible, and invisible*, and if they could be seen to be imbued with life, I should reverently believe, but with as sincere astonishment as if I saw an image of plaster of Paris suddenly endued with living breath ; and I should then at last think I saw Genesis enacted afresh before my eyes !

The Scripture informs us, in accordance with all modern discoveries, that everything was created *very good* in the sight of God. The Creator did not form imperfect essays of things to be afterwards evolved and their defect remedied by natural selection. Each creature is made after its kind, לְמִינֵהוּ,* and apparently *after a pre-existing idea* in the mind of the Creator, every plant in the field *before it was in the earth*, and every herb of the field *before it grew*. There is order, fixedness, and design from the first, and this is essentially the opposite to all that is involved in the doctrine of evolution, however modified. The Creation, as seen in Scripture and as studied in the records of geology, is perfect in each era from the beginning. The universe, as seen by the consistent evolutionist, is continually self-evolving, but still imperfect, and having its blunders rectified and its imperfections remedied, by a pseudo-divine power. The latter, or Pantheistic view, cannot be made consistently to agree with any one portion of Christian revelation.

All Christians believe in the watchful care and superintending hand of God extended over all His creatures, and many identify this with the Darwinian doctrine of "Natural Selection," or the improved phrase "survival of the fittest." I shall endeavour to show the difference as far as my space will allow. Both these evolutionist expressions are designed to convey the idea of continual improvement, of advantageous change resulting in development from one form into another, higher, more advantageous, or in some sense *fitter*, according to our views of creation.

Now, I am bold to assert that whatever may be the occupation of the imaginary power of Darwin, such is not the occupation of Divine Providence. The ways of Providence are confessedly mysterious ; but as regards the best field of observation we possess, they do not result in what would be, *to our apprehension*, the survival of the *fittest*. I care not what standard of fitness is adopted, it will be found that "the race is not always to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill ; but time and chance happeneth to all."

Has it not been said with some show of truth that—

"The good die first,
And they whose hearts are dry as summer dust
Burn to the socket" ?

It may be said that all this is explained by a future life. Let us turn then to the physical organization of man. Has this improved by the survival of the fittest ? All history, and I believe all geological research, shows the contrary. Whatever interposition of Divine power may have been put

* Gr. *idia*. See Ges. Lex.

forth, when God beheld and drove asunder the nations, to render the different races of mankind suited to their various abodes ; there is no such "selection" now. Every one knows that the children of English parents degenerate in India, probably also in Australia. The French, according to their own calculations, would soon die out in Algeria if left without fresh settlers. I hope I shall be pardoned for suggesting that the vigorous arterial circulation suited to the Teutonic race when called to populate the damp forests and marshes of ancient Europe, is not compatible with the powerful overstimulus of sunlight in America. From some less obvious cause it is not thought that the Spaniard thrives well in South America ; and yet, if we judge by the success of these nations in taking possession of these countries, they are the *fittest* to survive.

If we turn to the animal creation, I suppose every one will admit that the fittest do *not* survive. If we study the Assyrian sculpture or the Egyptian records, we find more noble, more varied, and higher types of animal life, than any that now exist in those ; and if we judge of fitness by aptness for domesticity, we learn that the Egyptians had succeeded in making useful to themselves, more than the few animals which we either do not now possess, or at least not as tamed creatures. If we go back a certain number of years, we find by the records of the past that man contended with and subdued animals of giant bulk and proportions, from which, if armed only with flints, he would, I suspect, now be glad to flee. (See Job xli. 30, original.)

There has been no improvement in the vegetable creation since the days when Solomon spake of trees, from the cedar-tree that is in Lebanon even unto the hyssop that springeth out of the wall. The only change has been that the fittest have *not* survived. The choice balsam has as much perished from Jericho as has the *reem* (unicorn) from the Jordan. The apples of Sodom and the grapes of Gomorrah may still be referred to as examples of "the survival of the fittest," but the vineyards have perished from Engedi, and "the clusters of Camphire" might be difficult to meet with. (Canticles i. 14.) The cedars of Lebanon have for the most part fallen to supply materials for the ships of Tarshish, as their congeners the deodars of the Himalayas have been hewn down, to a large extent I fear, in order to supply sleepers for railways. The Americans begin to mourn over their ravaged forests ; and everywhere man has been destroying the beauty and even the utility of creation. Many plants and animals have perished ; and "natural selection" has not furnished us with one new species of either. In 3,000 years this power has done literally nothing.

Mr. Lea thinks that I either misapprehend or misrepresent "the survival of the fittest." This is not the case, for I see it all around me ; but what is the result ?—simply that in this contest "the big battalions" do not always have their own way. The result of the struggle is that an infinite *variety* survive, and if you say these are the fittest to survive, you simply enunciate the proposition that the combination of circumstances happens to have favoured these the most.

At this season of the year (May) the varied kinds of grass and herbage seem emulously engaged in solving the problem "which shall survive." Moreover,

in the portion of my garden set apart for the cultivation of the e s common British plants, it is a daily care to prevent these from being elbowed out of existence by the seeds from the meadows taking root amongst them. The fields around me show that "natural selection" succeeds almost as well as artificial cultivation, for land on which for twenty or thirty years I have bestowed some pains with different artificial manures, seeking to improve the herbage, does not much surpass that on which no such care has been bestowed. If the plants of grass and herbage were counted in a square yard of each, I fancy there would be but little difference either in the *variety* or the *plants* themselves, after all my efforts to assist some in the struggle for life.

Why, then, do I quarrel with this expression—"the survival of the *fittest*"? My objection is simply to the last word, *and* to that which is implied in it. Fittest for what? For the good of man? I suppose not. Taking the particular instance of what is in sight whilst I write,—fields and trees, adapted for the use and pleasure of man. Are these in their natural condition? So far from it that in the time of our British ancestors all was, as far as we can learn, a wild forest, and even now the soil appears most adapted to the growth of trees. Man has altered all this, and that only too effectually—I wish he had left us some specimens of the fine old secular oaks of the Druids—so that we have an unknown period of *forest*, a millennium of cultivation, and next, if the rage for building continues long enough, the district will form part of "a province covered with houses," filled with people engaged in a life-struggle to realize the survival of "the fittest." Which of these three states, or the three in succession, was the original design of the Creator—the *fittest* in His sight? All is under the control of a watchful Providence, no doubt, but what of "the fittest"? I do not ask whether the *optimist* view is correct, or whether the English climate is the best that can be conceived, or her pastures the most fertile in the world, nor do I enter on the questions brought before us in Scripture as to "the groaning of creation." I feel too much my restricted space. I ask simply what is meant by "the fittest"?

I answer that it is a cautiously-guarded phrase, meant to take the place of "Natural Selection," and to *insinuate*, without stating the questionable fact, that there is a power existent ready to take advantage of every alight variation that might possibly be advantageous to the plant or animal, and so, gradually to develop legs and wings where they did not exist, or to form an eye or an ear by gradual moulding; or in the end to bring out man as the crowning point of this mysterious jugglery of the universe. God is deprived of the glory of His attributes! The heavens declare the glories of evolution, and the whole varied Kosmos shows the admirable effect of "the survival of the fittest"! This is why I object to the phrase.

My conviction is, that however subtly woven the theory may be, it is a piece of new cloth patched on to the old garment of Christian revelation, which cannot by any means be made to adhere—that *Christian Evolutionism* is pre-eminently a failure.

ORDINARY MEETING, JANUARY 7, 1878.

THE REV. PREB. CURREY, D.D., MASTER OF THE CHARTERHOUSE,
IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following elections were announced :—

MEMBERS :—The Right Hon. the Lord Nelson, Salisbury ; J. R. Coutts, Esq., London ; J. R. Fairfax, Esq., New South Wales ; Rev. M. C. Osborn, London ; Rev. W. B. Pope, D.D., President of the Wesleyan Conference, Didsbury.

ASSOCIATES :—Rev. J. Cook, D.D., United States ; H. G. Whiting, Esq., London ; Miss S. M. Gould, Bristol.

Also the presentation of the following Works to the Library :—

“United States Geological and Geographical Survey,”

Vol. XI., &c.

From the Survey.

“Quinology of the East Indian Plantations.” By J. E. Howard, Esq., F.R.S.

From the Author.

“Revelation and Science in complete Harmony.” By J. Coutts, Esq.

From the Author.

The following paper was then read by the Author :—

NATURE'S LIMITS: AN ARGUMENT FOR THEISM.

By S. R. PATTISON, Esq., F.G.S.

I SHALL endeavour to prove the existence of God from the fact that all natural phenomena are limited, and therefore subject to law, which requires the existence of a limiting power, the *science* of which is not disclosed by the phenomena, but the *cognizance* of which is disclosed to us by our experience of cause and effect, whereby we are led to a First Cause ; or, in other words :—Science is the discovery of established order in observed phenomena. The existence of order implies limits effected by ordination, limits imply a limiting power, a cause. The inference of a cause necessarily leads, as we prosecute it, to the affirmation of a First Cause, and this, by a like necessity, leads to the parallel conclusion that the First Cause must be infinite, or, in other words, must be Deity.

2. As Lacordaire eloquently puts it :—“Infinity is the first mark of the being without cause ; does nature bear this sign ?

Let us examine it. All that we see there is limited, all is form and movement, form determined, movement calculated; all falls under the straightened empire of measure, even the distances which remain unknown to our instruments, but are by no means unknown to our conceptions. We feel the limit even when our eye does not perceive it; it is enough for us to seize it at one point to determine it everywhere. The infinite is indivisible, and were but one single atom of the universe submitted to our feeble hands, we should know that nature is finite, and that its immensity is but the splendid veil of its poverty.”*

3. If all phenomena are limited by law, then they cannot have been self-originated, nor are they self-governed. A beginning without a Creator is inconceivable, and equally so the existence of law without a Ruler.

4. It makes no difference to this argument whether the limits of phenomena were fixed from the first, or vary through development under fixed laws; both are indications of a Creator. More roads than one lead to this terminus. On inviting you to follow the one indicated by the title of this paper, I first offer a few reasons for the pursuit.

5. There is a vague creed of *material infinity* pervading much of published scientific thought, a creed which is really quite at variance with the admissions and conclusions of the masters of science. Into this expanse of infinity it is stated that religion is entering, stripping itself free from the shackles of Scripture and of churches, and proceeding on a limitless career of human improvement. The assumption that nature, and the order of nature, are unbounded, constitutes the groundwork of these arguments.

6. In opposition to this assumption, I desire to maintain and urge that a consideration of the phenomena leads us to acclaim with Dante,—

“All, as they circle in their orders, look
Aloft; and, downward with such sway prevail,
That all, with mutual impulse, tend to God.”

7. The sentiment in question has arisen out of two great unverified hypotheses,—that of Uniformitarianism, inaugurated by the late Sir Charles Lyell, and Evolution, promoted by Mr. Darwin. These have given to our literature, language and colour far beyond the bounds of science. The two announcements of modern philosophy came so apparently complete, so easy of application, so facile to the

* *Existence of God: Conferences*, p. 17.

memory, that each seemed to be a real advance towards axiomatic knowledge. Both were introduced with much literary grace, and with copious familiar illustration, and although recent geological research has disproved Uniformitarianism, and recent Biology has disowned Darwinism, yet the influence of their easy fascination still pervades the world.

8. It is in order to examine the bearing of some old arguments on the new facts that I have chosen the present subject.

9. Of the material universe, and of life on the earth, it may be alike said that they are moving, moving either towards a boundary or into infinity, either by ordination or by self-caused development. In the former case we are under the necessity of postulating a Lawgiver, in the latter case we are under no such necessity, and must simply leave this question as we found it.

10. I desire to oppose both Atheism and Agnosticism; both the conclusion that there is no God, and the doctrine that we cannot possibly know of any. Atheism does not now rear itself up in noisy opposition to religion, but, looking at material phenomena, calmly announces that no God is there, and further, that not being there, He can be nowhere else, and that we are governed by the conditions in which we are found. It declares that this persuasion is a stage, the present stage, in the history of all things, and that the reign of virtue on the earth, about to spring from social science, is the bright future of humanity. It addresses us in untechnical phrases, and appeals to our love of independence and freedom. It denies the existence of religious instinct in man, and of any religion higher than social virtue, and, of course, ignores a future life as well as God. Leaving to others the task of showing how much narrower is this specific than is the need for it, my aim is to prove that external nature is absolutely unequal to the task of government thus imposed on it, because it is itself a finite creature, and the ruler required is one higher than the finite: that modern philosophy, which subordinates man to his environments, *i.e.* to nature, is confuted by the consideration that both nature and man are equally subordinated to some higher law.

11. The reiteration of the argument may be tedious, but when propositions which were supposed to have been long ago dead and buried, are summoned from their graves, and walk about at noon-day, it ought not to be objected that they encounter forms as antiquated as themselves. The proposition that we know nothing, either one way or the other, as to the existence of God, is now made as the outcome of physical

science, but it is of course well known as an opinion uttered in the very infancy of recorded thought. The ancient anti-Theistic doubts were dealt with by Plato, by Cicero, and other renowned "seekers after God." A quotation from Cicero will serve as a sample of the Theistic argument which has come down to us with all the glow of twenty centuries:—"Philosophers, if they are surprised at first at the sight of the universe, ought, when they have considered the regular, uniform, and immutable motions of it, to conceive that there is some being, that is not only an inhabiter in the celestial and divine mansion, but a ruler and governor of this mighty fabric."*

12. But this ancient consideration, although it has brought conviction and rest to the most illustrious minds from the beginning, cannot be expected to satisfy the adventurous spirits of the present. Emboldened by conquest, they reach, like Alexander, the ends of the earth; but, unlike him, they then have no desire for other worlds.

13. The reason for at present urging or reiterating Theistic truths is found in the astounding statements to the contrary made by scientists in support of the evolutionary theory. Professor Tyndall, at Birmingham the other day, is reported to have said, "It is now generally admitted that the man of to-day is the child and product of incalculable antecedent time. His physical and intellectual textures have been woven for him during his passage through phases of history and forms of existence which lead the mind back to an abysmal past." And again, "Hunger and thirst, heat and cold, pleasure and pain, sympathy, shame, pride, love, hate, terror, awe—such were the forces whose interaction and adjustment during the immeasurable ages of his development wove the triplex web of man's physical, intellectual, and moral nature, and such are the forces that will be effectual to the end."

14. But there has not been, and there is not, any such general admission of the evolutionary origin of all things. The assumption of it is a trick of advocacy.

15. As a further instance of this unwarranted habit of modern thought, I adduce the following closing sentence of a lecture recently delivered by Professor U. C. Marsh, of Yale College, the president-elect of the American Association for the Promotion of Science, and a distinguished Palæontologist:—"In this long history of ancient life I have said nothing of what Life itself really is. And for the best of reasons, because I know nothing. Here at present our ignorance is dense, and yet we need not despair. Light, Heat, Electricity, and Mag-

* *De Nat. Deorum*, book ii.

netism, Chemical Affinity and Motion are now considered different forms of the same force; and the opinion is rapidly gaining ground that Life, or vital force, is only another phase of the same power. Possibly the great mystery of Life may thus be solved, but whether it be or not, a true faith in Science admits no limit to its search for Truth."

16. We have the open avowal of anti-theistic opinions, and frequently the quiet assumption that the question has been settled by the verdict of a jury of experts. No longer is anti-Theism shrouded in scientific pamphlets or foreign languages, but it pervades periodicals, school-books, and general literature.

17. At the Munich meeting of the German Association for the Promotion of Science, Professor Haeckel is stated to have said that there is no plan of creation but "the accidental coincidence of mechanical causes"; and that the theory of the supernatural origin of life is "an old irrational myth"; and that carbon, "in its complicated combination with other elements, causes the peculiar physiological properties of organic compounds."*

18. I maintain that the true lesson taught by modern science is the very reverse of all this; that the laws of force, and of its conservation, and the ascertained limits of natural things, do actually bring the Divine Artificer nearer to our apprehensions than before.

I. *Limits disclosed by Science.*

19. Science has its limits. In its study we are carried on by our preceptors until we come to the acknowledged unknown. They then leave off, saying only to us that all beyond is unknowable; they stand still and point out to us the unpassed barrier. But instead of acquiescing in the apparently inevitable, or seeking if haply other sources of knowledge may exist, they invent a hypothesis of materialism, and add it to their philosophy, as though it were part of their discoveries. The Theist, arriving before the same veil, (not to be lifted by Science,) feeling, like his brother inquirer, irrepressible desire to penetrate the mystery of being, looks into his own experience of cause and effect, and, with the concurrence of the majority of mankind, accepts the deliverance expressed by Hooker,—“Only thus much is discerned, that the natural generation and process of all things received order of proceeding from the settled stability of *divine understanding*.”

* *Nature*, October 4, 1877. Meeting, September 17.

20. Atoms are limited by law. It is established that all atoms possess the same physical properties, and obey the same laws. The molecules of matter are evidently as sharply defined, as unworn, as at the first. They adhere to the law of their limitations, thus going far to prove that they have no inherent power of change. Use as we may the most penetrating powers of the microscopist, or the subtlest analysis of the chemist, or the more extended methods of the astronomer, we find every material object bounded and governed by law. The eternity of matter, though a conceivable idea, is yet unphilosophical, because unwarranted by what we know, and as we accept this conclusion it becomes impossible to avoid the question, "Whence, then, its limits?" If the waxing and the waning of all natural phenomena be found to extend to the whole Kosmos, and to characterize all the operations of nature, through all time, the question immediately occurs, "What set on foot the waxing and the waning?" If, as we believe, these cannot be accounted for, save on the theistical conception, we claim for the latter a place in every complete system of philosophy. The idea of many modern writers is that, by the aid of science, we may attain a knowledge of the very nature of matter itself. But Professor Tait observes, on the contrary, that "nothing is more preposterously unscientific than to assert that with the utmost strides attempted by science, we should necessarily be sensibly nearer to a conception of the ultimate nature of matter."*

21. Professor Clerk Maxwell said, at Liverpool, in 1870, "In tracing back the history of matter, Science is arrested when she assures herself, on the one hand, that the molecule has been made, and on the other, that it has not been made by any of the processes we call natural." An eternal progression is an impossibility; it is a contradiction, for progress supposes an end towards which it moves.

22. The evolutionary supposition is contradicted by fact, for on this supposition all development must have begun alike, and all be at the same stage at every moment in time, whereas we find its subjects in every possible stage at the same time.

23. Force is limited. By the correlation of force we get the fact of an energy working through various modes, the source of all change. We know of it only in its limited condition as it operates through matter. However mysterious may be the union between matter and force, we never find the latter apart from a molecule of the former. Pursue the idea

* *Recent Advances*, p. 284.

as we may, we are ultimately brought face to face with Force as a power working through matter, imprisoned always, yet ever free to move from one goal to another. When we term it Physical Force, Vital Force, or Volition Force, we have only expressed the idea of a power with law for its limits. Although energy is so readily convertible, its sum total cannot be added to, nor reduced. In quantity, as well as quality, it has absolute limits. We find it almost impossible to conceive of the minuteness of the particles of joint matter and force which science compels us to acknowledge. We are told that every molecule in a mass of hydrogen, at ordinary temperature and pressure, has, on the average, 17,700,000,000 collisions per second with other particles.

24. Perpetual motion is impossible, not only on account of inevitable change of form in materials, but because you cannot transfer back again all the force which you transpose into heat. Some of the heat is lost in the process, and the possibility of a perpetual equivalent is destroyed.

25. The absolute creation and absolute destruction of matter or of force are equally beyond scientific conception, but the translation of either from or into some form imperceptible to us is an everyday occurrence. Nor does matter or force ever escape from the dominion of law. No atom is forgotten by the regulations which fix and limit its being. Evolution is an orderly process, leading to impassable limits.

26. The whole course of the universe is the collective result of what are called the Laws of Nature. Dr. Whewell puts it, "All things are ordered by number and weight and measure; 'God,' as was said by the ancients, 'works by geometry'; the legislation of the material universe is necessarily delivered in the language of mathematics; the stars in their courses are regulated by the properties of conic sections, and the winds depend on arithmetical and geometrical progressions of elasticity and pressure."*

27. Creation is limited in time. Sir William Thompson and the physicists make out that, assuming the continuance of present physical laws, the earth cannot have been in existence more than from ten to fifteen millions of years. The present thermal condition of the earth requires that it should have actually come into existence as a globe within this definite limit.

28. We now know that a part of the light and heat of the sun and stars goes out into space, and does not return; and that a part of the motion of the great bodies in the universe

* *Bridgewater Treatise*, p.

is going off in friction, so that these bodies must gradually become cooler, and the earth become unfitted for the habitation of man. The heavenly bodies must in this way lose energy of rotation and revolution, the sun fade and die as a light-bearer, and the universe now visible be destroyed. This is the grandest instance of the actual limitation of the "things which are seen." We are every moment in the presence of powers destined to bring to a perpetual end the form of all things. The actual has come out of the possible, and is returning again into the same.

29. Assume that the retardation of the planetary motions will ultimately bring them all to a gaseous state, and that, in place of a solar system, there will only be a nebulous blot. Assume further, as expressed by Mr. Herbert Spencer, that then the increased molecular motion will effect other starry systems and lead to a re-transfer, and so to the beginning of another system, and so on; yet the fact remains, that all this is effected by law; no portion of time exists, no atom of matter, which is not dominated by limits; limits not inherent in matter or force, but imposed by government.

30. Glancing at Geology we find that the limits disclosed by it are truly remarkable, considering that it is the science on which the opposite conclusion has been based. Not only are the component minerals limited by the rigid laws of crystallography, but the strata into which these are compounded are defined by characters universally prevalent, whilst the accompanying fauna and flora are limited by distinct beginnings and the occurrence of distinct species throughout. Every now and then the exact limits in particular instances, as well in stratigraphical as in mineralogical and biological aspects, are disputed and re-arranged; but this only proves the existence and importance of the limits themselves. In Geology there is no running out into infinity, nor any tendency to boundlessness, either in its ancient or modern phenomena.

II. *Further Limits.*

31. Our power of observing nature is limited to the exercise of our senses, and these can of course only operate within the limits of time and space. We can conceive of an infinity of time and space, but we cannot know it; we can, therefore, conceive of an indefinite extension of knowledge, but it must be under conditions wholly different from the present.

32. Man's power over nature is limited. Enormous as are the strides which he has made in this direction since the

palæolithic age,—great as are the changes effected on the surface of the earth and in its productions by his agency, yet we find limits placed everywhere barring infinite progression. He is powerless to extinguish one atom of the matter or force with which he plays, he cannot alter or diminish the great currents which circulate within or around the globe. He can translate but not originate, combine but not create.

33. Life, as a working power, is plainly limited by the machinery through which it works. The machine requires constant supply of food. Life itself is only a directing force. Life is a peculiar form of action in living bodies at variance with the laws of matter and motion. But these life-motions themselves are limited, so far as we can discern, by the laws of environment. At present our powers of investigation are completely baffled by life. We stand within the shadow of some mightier Power than the universe displays fully to our gaze. Evolution, by sure footsteps, leads to inevitable decline and death. Evolution into immortality is inconceivable. There can be no modification equal to a total change at one bound, and intermediate steps there are none.

34. Life is limited in its manifestations. It is well established in all the provinces of biology, that life exists in certain types only; these types are subject to variations within limits, but such variations are always liable to recurrence towards their primitives, so that both type and variety are limited; the only difference being that the one is far more temporary than the other. It is therefore evident that life is limited by law; laws of type and heredity govern it.

35. Heredity, too, has its limits. After controlling the mode of evolution of a race, it controls the mode of its change or extinction. Deviations, either in the physiological or moral order, appear, grow, prevail, decline, and become extinct. The process may be arrested and held in suspense by conditions either natural or artificial, but, these being removed, the tendency towards the former average state commences, and works out a restoration to pristine form by natural law. The basis of the evolution is a law of heredity, it is assumed by the evolutionists that this is without reversals, but of this we have no experience. If it were so, it must still be limited. Mr. Herbert Spencer says, "No more in the case of man than in the case of any other being, can we presume that evolution has taken place, or will hereafter take place, spontaneously."

36. Moral heredity has its limits as well as physical. There is a tendency in every individual and in every family to return towards the average condition. Every observer who is old

enough to remember successive generations, cannot fail to recognize this fact.

37. In social science we see that the effect of the causes which work among aggregated masses of mankind is usually to produce a civilization more or less progressive. But we also see, in the daily records of poverty and crime, how civilization itself inevitably leads, in its turn, to degeneracy again, unless arrested by stronger motives than nature supplies, and hence there are natural limits to social progress; limits which many nations, like the Chinese, have long ago reached.

38. Instinct is limited. It is so by the law of heredity on which it is founded. Mr. Darwin introduces the conception of the variations of instinct becoming fixed into habits, modified by external circumstances, and transmitted with all improvements. Mr. Spencer has carried this speculation further, and has endeavoured to trace a natural growth of instinct from a simple reflex action onward into memory. But the facts are admittedly wanting to support either of these ingenious hypotheses. The observed order of things is, that instinct has its barriers as well as its laws. We may succeed in instinct, as in form, by the art of training, in producing certain alterations or fresh adaptations; but the moment we do so a conflict is set up between the new habit and the old tendency, in which the latter ultimately is sure to win.

39. Development is altogether limited by the law of its germ. We cannot, therefore, conceive of any *essential* addition, such as intelligence, being added during growth. The intellectual functions of man cannot be conceived of as growing out of his material structure.

40. Nor can we conceive of the production of new life by any action of matter. The experiments of Dr. Tyndall on spontaneous generation, and the researches of others in the same direction, forbid the supposition.

41. Not only do we everywhere encounter limits in nature around us, but we find them in the microcosm within us. We stretch our mental faculties to the utmost, only to meet with the uncognizable. We experience a limit, we are at the end of our chain. Professor Tyndall puts this very plainly. He says: "Were our minds and senses so expanded, strengthened, and illuminated as to enable us to see and feel the very molecules of the brain; were we capable of following all their motions, all their groupings, all their electric discharges, if such there be, and were we intimately acquainted with the corresponding states of thought and

feeling, we should be as far as ever from the solution of the problem: How are these physical processes connected with the facts of consciousness."* Indeed, it might have been concluded, that as it is admittedly impossible to understand the mode in which the physical forces exchange into each other, it is not to be expected that we should comprehend how they are related to mental or nervous conditions.

42. Mr. Herbert Spencer has well expressed the limitations of human knowledge. Supposing the man of science, "in every case able to resolve the appearances, properties, and movements of things into manifestations of force in space and time, he still finds that Force, Space, and Time pass all understanding. Similarly, though the analysis of mental actions may finally bring him down to sensations, as the original materials out of which all thought is woven, yet he is little forwarder; for he can give no account either of sensations themselves, or of that something which is conscious of sensations. Objective and subjective things he thus ascertains to be alike inscrutable in their substance and genesis. In all directions his investigations eventually bring him face to face with an insoluble enigma. He learns at once the greatness and the littleness of the human intellect."†

43. Our knowledge of God is of course limited, both by the extent of our faculties and the mode of His manifestations. He is represented to us by qualities existing in ourselves. Hence the enormous addition to our knowledge afforded by the Incarnation.

44. The idea of the personality of God is expressive of self-imposed (and, of course, self-variable) limits, as for the purpose of a manifestation of Himself; but all human personality is only another term for special limitation by paramount law or adaptation. The common belief of mankind that we are formed, soul and body, by some superior hand, bears testimony to the conviction of our limited nature. True, we are a law unto ourselves in the matter of our will, but we cannot escape into the infinite, either by way of our will or by way of evolution, for we are everywhere subject to law.

45. We find limits where our curiosity would most desire that there should be none,—at the extremes of psychology and physiology, the relations between mind and matter. The functions of these two are not relations of exchange or conversion, or progression, but of adaptiveness. Each is at the summit of its own series of facts; and, that each corresponds with the other, is the ultimate observation we can make.

* *Fragments of Science*, p. 6.

† *First Principles*, p. 66.

46. But if complete knowledge is limited, can this also be said of belief? Belief is certainly not limited by knowledge, that is to say, by clear complete knowledge. In common life we constantly admit this,—indeed most of our actions are grounded on knowledge less than complete. This is the explanatory fact which appears to reconcile Christianity and Philosophy, namely, that we may believe that which we cannot fully conceive of. We may believe a thing to be possible without knowing how. True, we cannot go beyond our power of apprehension. Faith finds its limits here. There must always be some grounds of faith which are the subjects of reason. These reasonable grounds suggest the object of faith; the willing student or believer lays hold of the dimly-seen guide and follows, whilst, it may be, the over-cautious or unwilling, refuse to trust to analogies or imperfect knowledge, and so stay without. The postulate so apprehended frequently becomes, however, verified in its progress. Knowledge apprehends, and the moral function of faith trusts, and thus the former becomes power. The confidence of faith is limited only by the limit in the supplies which cognizance can bring to it. The unknowable is not always unbelievable. Sir William Hamilton says: "The main scope of my speculation is to show articulately that we must believe as actual much that we are unable positively to conceive as even possible." Science deals with truth unfolded, faith with truth discovered but undeveloped.

"The deep things, I replied, which here I scan
Distinctly, are below from mortal eye
So hidden, they have in belief alone
Their being; on which evidence hope
Is built."

Dante.

III. *Law.*

47. Remembering how some of the profoundest philosophers and finest rhetoricians of ancient and modern days have expounded the office of law in the universe, it appears to be quite unnecessary to re-state the argument on this head. But, in spite of all that has been said, we are constantly told, in literature purporting to be scientific, that all things are progressing towards some indefinite future development, by reason of inherent properties and external conditions; and that the phenomena do, in fact, make and modify the laws.

We are invited to believe that nothing is really certain save progression; that natural advance is inevitable; and that religion consists only in accepting the action of circumstances, fulfilling social duty, and waiting on destiny. These sentiments have a secondary influence on current thought. Perhaps they express the love of inertia which seems to be a property of mind as well as matter; at all events, they serve as an apology for shrinking from the severer tasks which the acceptance of supernatural religion demands. I must, therefore, briefly refer to the function of law, as a limiting power, in order to rescue it from the category of mere necessity, by which it is sought to be substituted.

48. Whatever province of the universe we choose whereon to exercise our faculties of observation and reasoning, we soon come to the conclusion that there is a substratum of power, an inwrought energy, which accompanies us in all our investigations. There is something behind the phenomena, above the law, beyond the methods. We may term it inexplicable, or unknowable, because science cannot analyze, or compound, or describe, or even express it. But the universal sense of mankind terms it Divine.

49. The phrase so often used by chemists in order to describe the action of a substance, "behave,"—how it may be expected to "behave," and how it does "behave," shows their confidence that it will act in a certain manner, that its conduct is determined by law. If they feel compelled to say with Professor Huxley, that the ultimate analysis of things is, and must be, incomprehensible by us, the presence of a limiting and guiding power beyond the phenomena must I think be conceded. We at all events must apprehend the existence of the law, and must place a lawgiver in the blank left by the Professor for the incomprehensible. The very idea of law implies that of a force by which it is upheld; whether we speak of a law of nature or of social science. The phenomena are limited in their nature, the law is limited in its nature too; but beyond these, whether in the realm of physics or of mind, we come to the idea of a personal God. It is evident that all besides Him is limited, and no set of phenomena can be self-originated or endless.

50. The Duke of Argyll eloquently sets forth the progress of the idea, and Hooker with equal force depicts the consequences of the contrary supposition. The Duke says: "The whole world around us, and the whole world within us, are ruled by law. The perception of this is growing in the consciousness of men. It grows with the growth of knowledge;

it is the delight, the reward, the goal, of Science."* Hooker, on the alternate supposition, exclaims: "Now, if Nature should intermit her course, and leave altogether, though it were but for a while, the observation of her own laws; if those principal and mother elements of the world, whereof all things in this lower world are made, should lose the qualities which now they have; if the frame of that heavenly arch erected over our heads should loosen and dissolve itself; if celestial spheres should forget their wonted motions, and by irregular volubility turn themselves any way as it might happen; if the prince of the lights of heaven, which now as a giant doth run his unwearied course, should, as it were through a languishing faintness, begin to stand and to rest himself; if the moon should wander from her beaten way, the times and seasons of the year blend themselves by disordered and confused mixture, the winds breathe out their last gasp, the clouds yield no rain, the earth be defeated of heavenly influence, the fruits of the earth pine away, as children at the breast of their mother, no longer able to afford them relief; what would become of man himself, whom these things do now all serve? See we not plainly, that obedience of creatures unto the Law of Nature is the stay of the whole world?"†

51. Law is not itself a cause but an effect. There must have been an antecedent reason, in other words a Lawgiver, and of course the conception of any other than an unlimited, unconditioned God, is wholly inadmissible.

52. Although "Order" is "heaven's first law," and is universal so far as can be observed, reaching to the deepest recesses of earth and ocean, to the farthest height in the azure above, yet the mind refuses to rest in the mere fact of order. It inevitably springs to the conclusion of an Ordainer. Our own consciousness is the foundation of this conviction. We can analyze it no further, nor is it necessary that we should do so. Personal experience of the workings of our own intelligence leads us to apply at once to consciousness to explain the phenomena. We do not know all that is demanded of us when we are asked, "How came these things so?" but we know, that whatever else may be involved that we do not know, we do know, from our own experience, that the "How" contains an intelligent cause.

53. If all things are limited by law, and that law is

* *Reign of Law*, chapter ii.

† Book i. p. 206.

divine, then this is only another way of saying that nothing is absolute but God. The existence of a Divine, omnipotent Governor is proved. In this way the Divine Personality becomes the great objective truth in all the domains of thought, to the utter displacement of Pantheism, and in full vindication of the accepted theology of the Bible. The immanence of God in creation, which is affirmed in Scripture, becomes equally the testimony of nature.

IV. *Conclusion.*

54. We arrive at this conclusion, that scientific facts are explicable by the scientist only up to a certain point. The real nature of the things themselves lies beyond the utmost research, and yet they are not infinite, for they are regulated.

55. As nature itself is not infinite, so neither is it personal, as some subtle metaphysicians have surmised, after the example of the followers of Confucius. We are left, therefore, without any adequate solution, from the phenomena themselves, of the Theistic problem arising from all things around and within us. Nature is our companion and guide until we come to the higher solitudes of thought, where she veils her face and pleads incapacity to penetrate beyond.

56. It is a strange and wonderful spectacle that we behold in the great Temple of Study,—on the one hand, the priests of physical science inspecting, as it were, the entrails of their opened victims, as of old, refusing all other omens,—pausing in vain for a reply to their questionings; and on the other, the priests of mental and moral science bending over their own inner consciousness, and refusing all auguries besides, also waiting in silence, and in vain. And is there no reply?

57. Yes! for although there is no science of the Infinite, yet the Infinite is cognizable, and its cognizance is the foundation of natural religion, for it displays to us the only illimitable, the only unconditioned power, the Personal God. In spite of all the statements, or even apparent demonstrations, that God is unknowable, the fact remains that in all ages and places men have appeared who have placed God in this otherwise unknown infinite. Whether it be by intuition, according to one school, or by the aid of intuitive conditions, according to another, the conception is widespread, and all but unanimous. Let it be conceded that there is no science of Natural Theology, yet it can never be said that there is no sentiment concerning it.

58. The idea of the unlimited, of infinity, or of eternity, we gain only by repetitions of the idea of that which is bounded, adding one term to another, until we are tired of the process. When the logicians tell us that the Infinite is unknowable, they cannot mean to say that it is unthinkable; they admit the existence of such a conception. This is sufficient as a ground for belief, and, consequently, of responsibility. The universal consent of mankind proves that the idea of an omnipotent omnipresent God is a practicable thought, congruous to the mind. To affirm that He is only conceived of in symbol, does not affect the argument, for the mode of thought presupposes a possible subject.

59. Having learnt that science has no complete explanation of its own, we may propose one which comes to us from another quarter. We transfer the case from the Laboratory to the Forum; we put in a document, bring forward our attesting witnesses, and require its contents to be read. Perhaps it may not only yield important facts *per se*, but take up the clue abandoned by science, and conduct us into the unknown. Why should inquiry and research, so laudable elsewhere, cease to be praiseworthy here? Why may we not ask, of this other professing guide, the way, in the region so dark to philosophy? Doing this, we adduce the words of an eloquent ancient scholar, St. Paul, who gives, as the result of his considerations, the following:—"By *faith* we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear."*

60. It may be urged, in opposition, that the limits referred to exist not in the things themselves but in the mind conceiving of them; that the latter do contain within themselves sufficient reason for their being. But though we admit that we do not know the real ultimate nature of substances, yet neither does the objector pretend to this knowledge, and therefore we are at least as much entitled to say that matter obeys laws as the objector is to say that matter is a law to itself. Surely we may say with Socrates, "Should we not be wiser in assenting to that other argument, which says, as we have often repeated, that there is in the universe a mighty infinite, and an adequate limit"?

61. But it may be further objected, that the limits established lead us only into agnosticism. That although we

* Hebrews ii. 3.

may prove the existence of something beyond matter and behind force, which for the present we call law, yet of the primitive and fundamental cause of this we know nothing. I accept the statement, and admit that we cannot "by searching find out God"; yet, in the language of the same record, I would affirm that He is "not far from every one of us,"—in the power of our own apprehensions as we stand before the phenomena. Mr. Atkinson, in one of those letters, recorded in the Autobiography of Miss Martineau, which were so influential in promoting her avowal of atheism,—after stating that of the First Cause we know absolutely nothing,—adds the remarkable admission, "We judge it to be something positive; to so much the nature of the mind compels assent; but we do not know what this positive something is in itself, in its absolute and real being and presence. We must rest content to take it as we find it, and suppose it inherently capable of passing or flowing into all those effects exhibited throughout nature." What is this in effect but saying with Aratus,—quoted by St. Paul,—"God that made the world and all things therein, seeing that He is Lord of heaven and earth, for in Him we live and move and have our being"?

62. Whilst atheism seeks to displace the image, it would leave the shrine vacant, and the mind involuntarily fills the void. I remember seeing in the town of Vire the ruins of a Protestant church destroyed by the mob a century and half ago, and on the highest fragment, beyond the reach of the destroyers, there yet flashed out in the sunshine the golden letters of the first commandment, "Thou shalt have no other God but me!" In like manner does nature, in spite of all destructive criticism, ever lift aloft her ineffaceable testimony for God.

63. I briefly sum up by saying that it is established, and indeed admitted, that matter and force, mind and life, all exist in relation to something else. They are not alone in the world. Something more than mere being must be attributed to each of them. If we call the limiting power law, or if we cloke it under the term of necessity, either of these requires the existence also of something besides. We cannot rest without some conception concerning this higher power; no one has yet succeeded in offering any reasonable hypothesis concerning it save that of Theism; we are therefore driven to the acknowledgment—

"A God! all nature cries aloud!"

64. I crave to be allowed to add the observation that the pursuit of Theism is eminently remunerative. Light is pro-

jected, as from Aurora, on the onward path, and it is light which holds the heat-rays in combination. For it is impossible to realize conclusions of the understanding on such subjects without having the affections also suitably raised towards Him who is the Alpha and Omega, the source of all love, as well as of all power.

The CHAIRMAN.—I am sure that our best thanks are due to Mr. Pattison for the valuable paper which he has just read. (Cheers.) We shall now be glad to hear any remarks thereon.

Rev. J. FISHER, D.D.—I regard this paper as one of especial importance, I read it with very great interest indeed, and with feelings of the strongest approval; though I might perhaps take exception to a statement made in the tenth paragraph, where Mr. Pattison seems to distinguish man from nature, but I rather think he does not make the statement as his own, but simply adopts it from some other person. Mr. Pattison says in that tenth paragraph:—

“The ruler required is one higher than the finite—that modern philosophy which subordinates man to his environments—*i.e.* to nature, is confuted by the consideration that both nature and man are equally subordinated to some higher law.”

The sum of being, in my estimation, is God and Nature. Man belongs to nature, and is comprehended under it, and we cannot possibly put him out of nature. The paper speaks of the statements of some great scientists as being only hypotheses and assumptions, and I quite agree with Mr. Pattison, that the conclusions to which many such come, and the statements they make, are in many cases little better than hypotheses unproved and assumptions unwarranted. I would scarcely say, perhaps, as Mr. Pattison does in his fourteenth paragraph, that the assumptions made by Professor Tyndall are “a trick of advocacy.”

Mr. DAVID HOWARD.—I think this paper especially interesting to those who are concerned with the handling of science in popular addresses. To such people the great temptation is to leave out the limitations. It is more pleasant to put the positive than the negative side, and it is quite fair and correct to do so to a certain extent. You say what you know, rather than what you do not know. But the result is that, undoubtedly, the popular apprehension of science is that of a series of absolute truths, absolutely proved, and of absolute and infinite application; and it is very well that we should be reminded that this view is not the true one; for some of us, who ought to know better, are not free from the habit of mind which leads us to think that our knowledge is infinite, and that the applications of the laws we lay down are infinite. Sooner or later the exception which

does not prove the rule arises, and then you have to alter your rules or laws so as to accommodate the exception. Still these exceptions are naturally kept in the background, in popular science especially, and there is a great temptation, even in learned scientific treatises, to keep them a little out of sight.

J. A. FRASER, Esq., M.D., I.G.H.—I should like to ask a question of Mr. Pattison. He says in his 21st paragraph :—

“An eternal progression is an impossibility ; it is a contradiction, for progress supposes an end towards which it moves. It is contradicted by fact, for on this supposition all development by evolution would have begun alike and all be at the same stage in time, whereas we find its subjects in every possible stage at the same time.”

Well, probably all atoms began alike in one sense, but why must they all be at the same stage in time ? I do not know that I quite understand this passage in the paper, but possibly that is my own and not Mr. Pattison's fault. In his 46th paragraph, Mr. Pattison says :—

“This is the explanatory fact which appears to reconcile Christianity and Philosophy, namely, that we may believe that which we cannot fully conceive of.”

Here, I think, is one of the great mistakes which many men in the present day make ; they insist that they must understand all before they believe : for myself, I think I may believe, and I do believe, a great many things that I cannot fully understand, and never shall fully understand in this imperfect life. There is a well-known Latin proverb to that effect, but the same idea is given us in that passage of St. Paul's, “By *faith* we understand that the worlds were framed by the word of God, so that things which are seen were not made of things which do appear.”

Rev. S. WAINWRIGHT, D.D.—It is a couple of years since I was here before, but in the interval I have read the papers which have been laid before this Institute, and need not say that I have enjoyed them as much as most of the members ; I fully agree with the remark already made, that this is an especially valuable paper. May I, however, draw attention to some salient points. I object to leaving the whole conclusion so dogmatically although so neatly laid down in the very second sentence of the paper, where Mr. Pattison says :—

“The existence of order implies limits effected by ordination, limits imply a limiting power, a cause.”

If this is true, there is no need to write anything more ; the object of the whole paper is gained. But is it so ? Does order imply limits ? Ask Professor Huxley. I know Mr. Pattison better than to suppose that he means to rely on this statement alone ; he writes the paper in support of these theses, but it appears to me that our case would not be weakened if he proceeded in the other direction. It may be argued that Mr. Pattison has

written the paper with a view to make good these initial statements, but my objection is, that any one getting hold of the paper and looking merely at the opening sentences might be tempted to say, "The author assumes the whole thing in advance," and then throw the paper down. I think the case would have been stronger if the paper did not assume at the very outset, the thing which was going to be proved. Then in his third paragraph Mr. Pattison says :—

"If all phenomena are limited by law, then they cannot have been self-originated, nor are they self-governed."

But one of those to whom we stand opposed might well ask, "How do you know that?" I think it important for us to remember that it has been the just pride of this Institute, that we do not meet here to talk as if we had nothing but the Bible at our back, but to talk as men who, having the Bible Truth at our back, can argue on grounds that other men use against us in their speeches. What we have to cope with is a condition of mind which is just the very opposite of this—which declares on the one hand that all phenomena are limited by law, and yet on the other hand, that all phenomena are self-organized. There is a passage in Mr. Pattison's seventh paragraph about which I wish to ask him a question. He there says :—

"Recent geological research has disproved uniformitarianism, and recent biology has disowned Darwinism."

These words "disproved" and "disowned" are judiciously used, but I want to know if Mr. Pattison refers in relation to biology to the recent experiments with regard to the *Bacteria*; and, with regard to uniformitarianism, whether he refers to anything since the death of Sir Charles Lyell. I may mention that Sir Charles Lyell himself made a very damaging admission against his own theory of uniformitarianism, when he said that no lapse of ages would ever suffice to scoop out the bed of the Thames. Then I come to a passage at the commencement of the 20th paragraph, where Mr. Pattison says :—"Atoms are limited by law." When I find Professor Clerk Maxwell and Sir John Herschel declaring that the primary molecules are manufactured articles, I think that, considering that you cannot have a manufactured article that has not been made on a plan and for a purpose, it is unnecessary to say another word on this part of the subject, when these men, masters of their own special departments in science, tell you a fact like this. (Hear, hear.) In the 33rd and 35th paragraphs we have two or three important passages. Mr. Pattison says :—

"At present our powers of investigation are completely baffled by life" (par. 33).

"There can be no modification equal to a total change at one bound, and intermediate steps there are none" (par. 33).

"The process may be arrested and held in suspense by conditions either natural or artificial, but, these being removed, the tendency towards the

former average state commences, and works out a restoration to pristine form by natural law" (par. 35).

Now I lay stress on this because facts like these are just as true as that twice two are four, and it is important to bear in mind that not one of these facts has been altered by anything done on the other side. You may take a sponge or a cork and hold it under water and so long as you hold it there it will remain submerged, but the day will come when you cannot hold it down any longer, and then, by an inherent virtue or property of its nature it comes to the surface. You can alter the limits within limits, but you cannot remove them, and the tendency to the former average state recommences. In his 38th paragraph Mr. Pattison says :—

"The observed order of things is that instinct has its barriers as well as its laws."

Of course this is so, and instinct in the same species was the same in remote ages as it is to-day. If instinct had not its barriers, the instinct of the beaver to-day would be a different thing from the instinct of the beaver in former times. Then Mr. Pattison asks a little further on :—"How are these physical processes connected with the facts of consciousness?" There is a very remarkable passage in Professor Huxley, and we need nothing further. We are anxious to vindicate that there is a spirit in man, and that the Almighty giveth him understanding. Now it is well known that it takes about seven years for the change of the whole of the constituent portions of our bodies; but though this is so, the inhabitant is still the same. Do you know this by consciousness? What is consciousness? Nobody knows, and I am only saying this as a reason for dwelling so strongly on Professor Huxley's admission, when he says : "How it came about that consciousness should be associated with the irritation of nervous tissue, is as utterly incomprehensible as that the djin should appear in the Arabian story at the rubbing of the lamp." We have Professor Huxley telling us, that it is utterly incomprehensible why he should be conscious of anything. After all there is more in heaven and earth than is dreamed of in our philosophy, and we have to fall back on the old truth, that "there is a spirit in man, and the Almighty hath given him understanding." In his 47th paragraph Mr. Pattison says :—

"We are constantly told . . . that the phenomena do, in fact, make and modify the laws."

Mr. Pattison objects to this statement, but I do not object to it at all. I make a point of surrendering everything that these men can make a fair pretence of asking me to surrender, and therefore I give that up. Even if it were not so I would still give it up, and would ask : "Well, gentlemen, what makes the phenomena?" "Why the nature of the thing?" "Then what makes the nature of the thing?" I do not like the use of the word "law" at all. You remember what Chambers, the author of the *Vestiges of*

Creation, says in summing up one part of his subject,—that there are only two great departments in the universe, that law makes this and that, and law does this and the other. When I read that, I could not help saying, “It is not so.” Law does nothing. It is merely a convenient term describing the mode in which power acts. It is power that does everything, and law does nothing. I object to the use of the word even in such a passage as that which I find in the 60th paragraph, where Mr. Pattison says :—

“But though we admit that we do not know the real ultimate nature of substances, yet neither does the objector pretend to this knowledge, and therefore we are at least as much entitled to say that matter obeys laws as the objector is to say that matter is a law to itself.”

I do not see that as Christians or Theists we gain anything by saying that, for “law” is in fact a misnomer in such cases. What is law? Simply a collation of the facts. When you use the term law of grammar or language, you mean that such and such a thing is an observed fact in proper speech,—that it is a prevailing usage. But there is no exhibition of power in that; and when you use the term “law” in any sense implying power or action, you are importing a purely false meaning into it. There is one other passage in the 58th paragraph in which the word “unthinkable” occurs. Mr. Pattison says :—

“When the logicians tell us that the Infinite is unknowable, they cannot mean to say that it is unthinkable.”

Professor Tyndall makes a great deal of that. He says of the creation of man, and of the statement that God breathed into him the breath of life, that it is unthinkable—that you cannot think it. I ask, “Is it unthinkable?” and I will leave it there. And now will you let me leave the whole subject by drawing attention to two or three points summing up what I have been saying? You know what Professor Tyndall tells us in a brilliant passage about the salt crystals. He says, “Look at them, they are made what they are.” Suppose you stood before the pyramids of Egypt and were told that nobody had planned them. But you know that there was an architect and swarms of slaves to carry out his design. So he says with the salt crystals, the unscientific mind can picture to itself swarms of slaves depositing those crystals, but that is not the scientific idea. The scientific idea, forsooth, is that those crystals are self-positing. We get rid of the slaves at once. I will not disagree with the Professor: we all know that they are self-positing; but what I fail to see is how the dismissal of the slaves gets rid of the master. (Cheers.) The slaves were there only because there had been a preceding mind, which had an idea to carry into execution; but when you talk of the self-positing crystals, you no more get rid of the evidence of mind than when you talk of the self-adjusting valves of the steam-engine; in fact, the evidence of mind is all the greater. But when you get to life—look at the

lowest manifestations of vegetable life—you can make motion of heat and electricity, but when you come to vital force, as in a plant, you can do nothing of the kind. Vegetable tissue decomposes carbonic acid as carbonic acid is not to be decomposed in our laboratories. Look at that fact. Every leaf of every weed, or herb, or moss, or lichen, shows that when the first particle of vegetable matter was seen in the world, there had come something which could not be produced by any other means than its own growth and propagation. Professor Huxley says: "I see no break: there is unbroken continuity"; but there was a break, for you come to a time when vegetable tissue was first called into existence, and that vegetable tissue could act upon carbonic acid as nothing else ever could or ever did. Take protoplasm, which Professor Huxley says cannot be made except by contact with antecedent life. You talk of the protogenes of Haeckel, and tell me that they are the first embodiments of the power which we call vitality. Here, then, is the fount of the power which we call vital force, and which is not chemical nor mechanical. From your protogenes to man there is no break, but still there is no such thing *in rerum natura* as life in animal or plant except through antecedent life! To the protogenes I say, "You are the first things that lived. Did you inherit your life? Was it handed down to you?" "No," they reply, "or we should not be protogenes." "And yet you are alive?" "Yes." "But there is no such thing as living without protoplasm, and protoplasm does not exist except by connection with antecedent life." (Loud cheers.) Therefore these protogenes are and are not alive, and I leave it to the other side to settle that question.

Rev. Principal SAUMAREZ SMITH, B.D.—I am not going to address you at any length to-night, and indeed it would be unnecessary to make many remarks because of the long and interesting speech which we have just heard from Dr. Wainwright, as a comment on Mr. Pattison's interesting paper. But I should like to add one illustration from a book, which I have lately been perusing, by a German professor—I think a Roman Catholic theological professor—entitled, *The Bible History of Creation and its Relation to the Results of Natural Science*. Now I think the point is a good one to illustrate the subject of a paper on nature's limits. Professor Reusch says, with reference to the assumption made that the beginning of all things was an enormous mass of gas extended through space,—that physical science, taking its results, knows only of four ways in which that presumed first matter could be condensed or consolidated: (1) by external pressure, (2) by the property of gravitation, (3) by chemical attraction, and (4) by a lowering of the temperature; and then he shows that none of these agencies could have produced the required result in the gas itself, except through some force besides matter and outside space. Therefore, you have the argument of the paper, that the limit of nature which you get by these processes, necessarily postulates something outside nature which you

may or may not know,—that there must be some initiative force outside in order to make a beginning: I think that this is an interesting illustration. I have been very much pleased with Mr. Pattison's paper, and with the discussion which has occurred upon it, and I think the great moral of the paper is, that we must remember how all the scientific processes and all scientific knowledge are, to quote an expression used by Professor Virchow in his address to the recent congress of naturalists at Munich, only "piece-work." Let us remember that though the knowledge obtained by scientific men, from year to year, goes a great way; it does not cover the whole space. When we leave the limits of physical science, and scientific research into phenomena, and get into the sphere of philosophy and the mental processes, we have another handle to use; and what I believe these discussions more and more prove is, that you never can get to any valuable truths without taking hold of both the handles, without bringing your philosophy in to the assistance of your physical science, and having the help of your physical science to the framing and modifying of your philosophy. Then, after all is said, there comes the still further question, "Do we know anything more?" and further, as Dr. Wainwright has said, with what we know in revelation, we can go on from our physical research and observation of nature, and from our investigations into consciousness, and so on, to a higher sphere still. Thus it is "by faith we have the knowledge that the worlds or the ages were made by the Word of God, so that we cannot think of the visible as having come into existence out of phenomena," but we must think of it as having come into existence from a Power beyond. Then we know from revelation something more about that Power than that it was merely the First Cause—we know something about Him, the Almighty and Omniscient, "the source of all love as well as of all power." (Cheers.)

MR. PATTISON.—I am very much obliged to the meeting for the way in which my paper has been discussed. The first speaker objected to my making nature and man two entities. In the passage which he referred to I have not tried to dissociate them, but have simply spoken of man as being surrounded by phenomena,—which it is the fashion to call "environments," the man being one thing and the environments another. It is true that I have used the phrase, "a trick of advocacy," but no one would know better what I meant, or would forgive me for it more heartily, than Professor Tyndall himself, to whom I have applied it. I apply the phrase in reference to one used by Professor Tyndall, "It is now generally admitted." Professor Huxley also errs in the same way, for, after giving us a hypothesis, he sums up and says, "It is the general belief." I speak of that as "a trick of advocacy," which, however, only means the skilful use which an advocate makes of all the points within his reach for the purpose of obtaining the verdict. The third speaker referred to what I have said in my twenty-first paragraph, and used as an argument, but have not, perhaps, expounded with sufficient clearness, in reference to development. If

I can make what I have said intelligible, the argument is fatal to the development or evolutionary theory. Professor Huxley, in his *Genealogy of Animals*, thus defines evolution :—"The mutual interaction, according to definite laws, of the forces possessed by the molecules of which the primitive nebulousity of the universe was composed." I will not stay to ask whence the laws or forces come, but only to say that if in the case supposed, there are molecules which have a mutual interaction according to definite laws, then the stage of progress which that interaction produces must be in all respects and everywhere the same. There would be no room for the variety of structure that we find, and the dissimilarity of form that we see in the whole of creation. If the molecules acted from the beginning, according to definite laws, upon each other, and thereby produced certain effects, then those definite laws must produce the same effects ; and so we should see the products of that work in the same stage all over the world, whereas we really do find the very contrary to be the fact. This is what I meant. Dr. Wainwright complains that I have stated my conclusions too dogmatically at the commencement of my paper. I quite admit the charge. I am lecturing to a philosophical society, but even in a philosophical society it is necessary to sound the *rappel* as it were, and to put forward with as much force as possible the truths which you afterwards prove. This is not a mere teaching paper addressed to a class, it is one in which I have attempted to gain the ear by stating clearly and fully the propositions which I intended to maintain, even at the risk of some reiteration. In the valuable observations of Dr. Wainwright there were many remarks which were connected with the meaning of terms ; and with regard to them I would simply say, that if I had had an opportunity in the time allotted to me of annexing an interpretation clause to my paper, I think we should have found ourselves pretty well agreed. With regard to the point raised about the barriers of instinct, I specially refrained from carrying that any further, though it was an interesting subject to go on with, because I did not wish to burden the paper with an accumulation of mere illustration. I cannot consent to throw overboard that which is, in my view, the very essence of the question, namely, whether the phenomena make the laws, or whether the laws are independent of the phenomena. I concede that it would be better to use the word "rule" than the word "law." We are in the habit of using them almost one for another, but the word "rule" would better express the sense of what we mean in this argument than the word "law." I think I have shown that there are rules and there is law beyond and above phenomena, and, therefore, I do not think it a fact that the phenomena are above the law, which is the contention on the other side. It was well put that philosophy and physical science are two handles which we must work together, and the value of this society is that it does work one handle which the scientists do not touch. As to my authority for the statement about modern opinions concerning geology and uniformitarianism ;

uniformitarianism has been on the decline, and was indeed declining, before the death of Sir Charles Lyell. This theory is not held now even by Professor Prestwich, or any one else, without great modifications, so far as I am aware; and most of the books on geology published nowadays, which have to deal with the present condition of the crust of the earth, speak of things which must have occurred under very different conditions to what the doctrines of uniformitarianism require. I tried to bring this before the society in two lectures, which I have already delivered here, and, therefore, I will not now enter into the matter any further. With regard to biology, I do not refer in my paper to the microscopic bacteria, &c., but to the testimony afforded by Barrandé respecting the *Silurian cephalopods*, which absolutely disproves the doctrine of evolution. In like manner Mr. Davidson, one of the most competent observers in Europe, in regard to the *terebratulae*,* shows that they disprove evolution. He has given all the matured experience of an accomplished man for a whole lifetime, to this very work, and, therefore, he is a competent authority. Then Dr. Carruthers, of the British Museum, our best palæontological botanist, comes to the same conclusion, and so does Mr. Gwyn Jeffreys, the acknowledged chief of conchologists, who was the president of the Biological Section of the British Association at the Plymouth meeting. He shows that the contrary of evolution is taught by the forms of ancient and modern molluscos animals. I need not give any other authorities on this question. The meeting was then adjourned.

* See vol. i. pp. 130 and 139.

ORDINARY MEETING, JANUARY 21, 1878.

THE REV. ROBINSON THORNTON, D.D., VICE-PRESIDENT, IN THE
CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following election was announced :—

ASSOCIATE :—G. H. Reid, Esq., New South Wales.

Also the presentation of the following Works to the Library :—

"Proceedings of the Royal Society," Part 184.	<i>From the Society.</i>
"Brain and Intellect." By J. Coutts, Esq.	<i>The Author.</i>
"Man's Organic Constitution." By the same.	<i>Ditto.</i>

The following paper was then read by the author :—

MR. MATTHEW ARNOLD AND MODERN CULTURE.

By the Rev. PROFESSOR LIAS, M.A., St. David's College,
Lampeter.

WE are continually being told that Christianity, to use a favourite word with modern society, is "doomed." It is so utterly at variance, we are informed, with modern culture, modern discovery, modern science, modern enlightenment, that it is impossible that it can do more now than drag out the remains of a lingering existence. Expelled from among the cultivated and intelligent, it will soon be obliged to take refuge with the ignorant and superstitious, until the progress of education shall one day sweep the last vestiges of it from off the earth. It is true that neither modern culture, discovery, science, enlightenment, have enabled us to make much progress in the mental, certainly not in the theological—I use the word in its strictest acceptation—departments of philosophy. The latest discoveries in this last region are only a progress backward about two thousand years. The "unknown and unknowable," or, as Mr. Arnold prefers to call it, "the unexplored and inexpressible,"* is, after all, only a new name for the Supreme Being of Epicurus and of the Gnostics.† The absolute reign of unchangeable law has been heard of before in

* *Literature and Dogma*, p. 58.

† According to Hippolytus, Basilides regarded God as pure non-existence like Schelling, Hegel, and others. Valentinus' supreme deity was Bythus ; that is, depth "unexplored and inexpressible," existing in silence.

the schools of the Stoics.* And the modern doctrine which identifies God with ourselves and ourselves with God, and all with the universe, is also to be found in many of the ancient systems. Yet, in spite of the inability of our modern philosophers to present us with anything but theories of the Infinite and Absolute which have been found incapable of meeting the wants of mankind, the blasts of the trumpets at which the walls of our Jericho are to fall flat are blown as confidently as ever. The danger is in fact considered so imminent, that a mediator between the combatants has appeared in the person of the gentleman whose name stands at the head of this paper. Christianity, he considers, is lost, unless she enter into a parley with her assailants. It is time that the conditions of peace should be decided, and he has drawn them up. It would be a serious thing for the world if Christianity and the Bible were to be entirely abandoned. Therefore they are to be suffered to exist.† But modern culture has had so indisputably the best of the conflict, that, in order to escape total annihilation, by far the greater part of Christianity must be sacrificed. The Bible is to be retained, but not all, only just so much as Mr. Arnold thinks we are entitled to keep. Miracles, prophecy, the authenticity of its books, its doctrine of a Personal God, all are to go; but we are to be allowed to retain as a residuum, that, and only that which, according to Mr. Arnold, has a "verifiable basis"‡—the proclamation of a "not ourselves that makes for righteousness." Christianity is to exist still, but she must be prepared to surrender her belief in the Father of our Lord Jesus Christ, in God manifest in the flesh, in a Risen Saviour, in God the Holy Ghost. She must abandon her creeds—all of them§—as the product of "popular" or "theological

* Mr. Arnold imitates the Stoic philosophy in its uncertainty and inconsistency. He does not appear to believe in a law of necessity affecting actions (many of the Stoics excepted actions from that law), for he seems to conceive the possibility of man's resisting the "not ourselves that makes for righteousness." He does not identify man with the principle that "makes for righteousness," for he declares that principle to be "the not ourselves." But when he speaks of immortality, he seems to regard it as a kind of "remerging in the general soul," as Tennyson calls this idea in his *In Memoriam*. For immortality is a "living in the eternal order, which never dies."—*God and the Bible*, p. 393.

† Preface, pp. viii, ix.—"We regret the rejection [of the Bible] as much as the clergy and ministers of religion do." "Let us admit that the Bible cannot possibly die."

‡ Preface, p. x.

§ Ch. ix.—"Aberglaube re-invading."

science," and she must content herself with that exposition of the "stream of tendency whereby we fulfil the law of our being," which has been given to the world by means of what Mr. Arnold calls the "method," the "secret," and the "mildness and sweet reasonableness" of Jesus.*

2. This is a sweeping, and will be to many a startling, proposition. To most of us it will appear to refute itself. For it comes to this, that we are not only to sacrifice ninety-nine hundredths of the Scriptures, but all the distinctive features of Christianity. If all that the Bible does is to tell us that there is a "not ourselves that makes for righteousness," we can do without it, for conscience tells us as much, and conscience can surely stand in no need of assistance from a book, the greater part of which, if Mr. Arnold is to be believed, is simply very earnest nonsense. And the world, after all, can hardly be said to be deeply indebted to Jesus Christ, if all He has done has been to be "mildly and sweetly reasonable," to have suggested a "method" whereby the change of the "inner man" may be effected; and to have disclosed a "secret," namely, the value of self-renunciation as a way to peace.† But this is Mr. Arnold's way of saving Christianity, and if we do not accept it—if we do not reject the "glosses" which "the Churches put upon" the Bible, neither the Bible, nor Christianity, in his opinion, "can possibly live."‡

3. It is, of course, impossible, in the brief space to which my remarks must necessarily be confined, to do more than take a general view of his line of argument, and to point out, as far as I can, the fallacies which underlie it. To attempt to refute all the statements contained in the two books to which I am referring, would fill a volume twice the size of both together. But, inasmuch as Mr. Arnold's attitude is a fair specimen of that which men of culture are fond of assuming towards Christianity, without giving themselves much trouble to examine the grounds on which they have assailed it, it may not be altogether useless to examine how far such an attitude is justified by the facts of the case.

4. I do not deny that some portions of Mr. Arnold's book are true and useful enough. Judaism is not the only religion in which men have "made the word of God of none effect by their traditions." There has been, and is still, a traditional Christianity as well as a traditional Judaism. Bishop Taylor, in his treatise on Repentance, complains that the elementary truths of religion have been overlaid by human

* P. 215.

† P. 222.

‡ Preface, p. ix.

glosses until it is almost impossible to ascertain what they are. And so we are constantly obliged to recur to the fountain-head to ascertain the true meaning, in the mind of Christ and His Apostles, of words which have been bandied about in various schools of theology, till scarcely a vestige of that meaning remains. Therefore, Mr. Arnold has done the cause of religion some service by recalling to our minds the original signification of several of the words we are accustomed to employ. He reminds us how far our modern use of such common words as "repentance," "self-denial" (p. 202), and the like, have drifted from the sense in which they were used in the Bible. If he is not always right, his method in this respect is worthy of our imitation, and we may derive much useful information from him on many points relating to the exegesis of the Bible,* which means, let us not forget, the ascertaining the actual mind of the original preachers of Christianity on many most important points of theology and morals.

5. There is another point on which I conceive Mr. Arnold, by insisting, has done good service. Though I am far from believing with him, that correct intellectual conceptions are unnecessary to the "ordering our conversation right," yet I agree with him, that the main object of Christianity, as well as Judaism, was not the acceptance by the mind of certain abstract propositions, but *conduct*. If he is correct in saying that "morality, ethics, conduct," are "carefully contradistinguished from religion" by theologians,† he is right in blaming them for such separation. For we are told by the Apostles, that God is love; that love is greater even than faith and hope; that he that dwelleth in love dwelleth in God and God in him; and that he that hateth his brother is a liar, in whose heart the love of God cannot dwell. We are told that if we wish to know the truth we must wish to do God's will. Hence, then, the acceptance of theological propositions of whatsoever kind, or rather, as I should prefer to put it, the acknowledgment of certain facts which it is important for us to know, is but a means to an end,

* Especially in *Literature and Dogma*, ch. vii.—As an instance of this, I would mention the passage in p. 196, on "metanoia." "We translate it *repentance*, a mourning and lamenting of our sins, and we translate it wrong. The lamenting one's sins was but a small part of 'metanoia,' as Jesus used the word; the main part was something far more active and fruitful, a *change of the inner man*." He is not so happy when he translates *χάρις*, 'grace,' by *happiness*.

† P. 19.

and that end the identification of our wills with His Will,* Who to Mr. Arnold's eyes is the "not ourselves who makes for righteousness," but Who, in the eyes of men who I venture to think were yet more enlightened than he, is not only the Great Personal First Cause, the Creator and Preserver of all things, the Father of our spirits, the Father of our Lord Jesus Christ, but One the conception of Whose Being rises above and includes all these in the idea of Universal Love. Yet I may remark in passing, that Mr. Arnold does not seem to be altogether consistent with himself. "The religion of the true Israel," which he reminds us was "the good news to the poor" (p. 236), can only, he declares, be properly understood by means of "culture" (Preface, p. xiii.); that is, the knowing "the best that has been thought and said in the world." This was not the view of the first propagators of Christianity, for St. Paul tells us that not many wise men according to the flesh, not many mighty, not many noble, were called. And surely, if "conduct" be the end of religion, it is as much within the reach of the poor man as the rich, or it is difficult to understand how the Christian religion can have been "good news to the poor" at all.

6. But to return. It must also be admitted that in Mr. Arnold's reply to objectors, which, originally published in the *Contemporary Review*, he has given to the world in a book entitled *God and the Bible*, his tone is far more moderate than in the book in which he first assailed the Christianity of the day. It would seem as though, occupying as he does an intermediate position between Christians in general and the Extreme Left of their sceptical antagonists, and having had personal experience of the methods of the latter, he had become more sensible of the grave faults of logic and temper which those antagonists continually display. He consequently turns upon them, and with that vigour which, so conspicuous in his other works, is conspicuous by its absence in *Literature and Dogma*, he lays bare all the shortcomings of their school, their extraordinary assumptions, their wonderful arguments, their habit of ignoring all that is likely to tell against the conclusions which they confidently present to the world as unassailable.† But inasmuch as

* Tennyson, *In Memoriam*, Introduction, "Our wills are ours, to make them Thine."

† The book called *Supernatural Religion*, and M. Renan's late paper in the *Contemporary Review* on St. John's Gospel, are remarkable instances of this off-hand dogmatism on critical and historical points.

he has nowhere retracted the assertions made in *Literature and Dogma*, though on some comparatively unimportant points he has modified them—inasmuch as the difference between the two books, regarded from a Christian point of view, is one of tone rather than of actual principle,—I may fairly regard Mr. Arnold as still responsible for the opinions expressed in the former volume. Regarding most of those opinions, as I do, as dangerous and unsound, I have made an endeavour, in this paper, to call attention to them, and to the way in which they are established, or supposed to be established.

7. Before entering into an analysis of Mr. Arnold's volume I have a word to say on its manner. Nothing has more struck me of late than the marvellous disproportion in intellectual calibre of attacks upon Christianity, to the effect they produce upon society. The publication of "Supernatural Religion" was hailed as the birth of a prodigy. Its learning was immense, its arguments unassailable, its mental force extraordinary, and Christianity, exhausted by the wounds inflicted upon it by so doughty a champion, was destined to sink into an early grave. But another champion* appeared in the lists, and it soon was found that the combatant likely to perish was not Christianity, but "Supernatural Religion," and though the first two volumes were received with enthusiasm, a significant silence has hailed the appearance of the last. So in like manner it appears to me that Mr. Arnold's book, though it has attracted much attention, is hardly worthy of the high and deserved reputation of its author. Had a book, equal to it in ability, in logical force, in vigour of style, in clearness of arrangement, been written in defence of Christianity, few persons, I believe, would have been found to cut the leaves. For as regards logic, Mr. Arnold falls into precisely the same errors, as I shall endeavour to show, as those of which he complains. As regards style and plan, his diffuseness, and the continual repetitions to be found in his pages, are apt to become a trifle wearisome, while the personalities with which he sometimes tries to enliven them will not bear a moment's comparison in brilliancy, in piquancy, in originality, with the satirical touches which have rendered him, when writing on other subjects, so deservedly a favourite with the public. But this circumstance only serves to illustrate the fact, which I have often noticed, that the ability which will secure a man a front rank among

* Canon Lightfoot in the *Contemporary Review*.

the assailants of Christianity, would only give him a very subordinate place among its defenders.*

8. The first thing I have to remark upon in Mr. Arnold's method is his dogmatism. There is nothing, apparently, to which he is more opposed than dogmatism (p. 45), yet nothing is more characteristic of his teaching. "*Hypotheses non fingo*," he says (p. 176), but his work bristles with hypotheses from end to end. Thus, he asserts that "the language of the Bible is fluid; passing, literary, not rigid, fixed, scientific," but he never attempts to prove it. He asserts, again, that the language of the Bible is, as it were, "thrown out at a not fully grasped object of the speaker's consciousness";† but he brings no argument forward to establish his point. He asserts that the personification of "the Eternal" by Israel was the anthropomorphism of an orator and a poet, without the slightest attempt at scientific accuracy; that the Hebrews, though "by tradition, emotion, imagination," they learned to attach to the phrases of the Bible a meaning beyond the "plain sense" in which Mr. Arnold tells us they are to be received, did yet, originally, attach to them no such meaning (p. 62); that God is only a "deeply moved way of saying conduct, or righteousness," and that to this deeply moved way of saying conduct, or righteousness, the Israelites transferred all the obligations which, really, were owing to righteousness itself (p. 48); that to study with a fair mind the literature of Israel is the way to convince oneself that "the germ of Israel's religious consciousness" was "a consciousness of the not ourselves which makes for righteousness" (p. 51); that the history of creation was evolved by the Jewish historian from the idea of righteousness (p. 35); that "the monotheistic idea of Israel is simply seriousness"; that the author of the Gospel of St. John completely fails to apprehend one of the discourses he records (p. 174); that St. Paul is absurdly wrong in his interpretation of Scripture (p. 140‡); that St. Peter's argument in Acts ii. 25—35, "if

* There are many instances in which a man who has held a high reputation when regarded as a sceptical or semi-sceptical writer, has come to be thought a very ordinary person when he has been contented to accept the orthodox creed.

† P. 12. This statement is frequently repeated.

‡ St. Paul's "argument is that of a Jewish Rabbi, and is clearly both fanciful and false." Is Mr. Arnold entitled to correct so great a man as St. Paul in so off-hand a manner? Setting Revelation aside, St. Paul has largely influenced human thought for 1800 years, and his influence is hardly as yet on the wane. Will Mr. Arnold's last as long?

intended to be serious, is perfectly futile" (p. 228). But I need not multiply instances. From the beginning to the end, Mr. Arnold's book is full of unproved assertion, and this, I would beg my hearers to remark, is a common characteristic of the works which are directed against "dogma." But surely the least we have a right to demand from writers who write against dogma is, that they should be carefully undogmatic themselves; that they should call upon us to accept nothing on their own authority, but prove every position they take up with the strictest logic. If they fail to do this, their objection to dogma falls to the ground, and the only question that remains is, whether we will accept the dogmas of Christ and His Apostles, which have stood the test of time, or those of some very confident, but not of necessity very trustworthy writers in the nineteenth century.

9. The next point to which I shall invite attention is Mr. Arnold's definition of religion. He is ingenious in definitions, and his book abounds with them. Whether he is as successful as he is ingenious I cannot now stop to inquire. Those who are curious in such matters can study his definition of God.* But his definition of Religion can hardly be accepted. He describes it as "morality touched by emotion."† If we are to be as strict in our attention to the derivation of words as Mr. Arnold is, this definition will hardly serve. For religion is surely that which binds us back; keeps us, that is, from following the bent of our natural will, in deference to what we inwardly feel to be due to a Being, or beings, of a higher order than ourselves. And surely the idea of emotion is singularly misleading in connection with morality. For emotion is essentially fitful, irregular, transient, varying with our physical health and external circum-

* Pp. 41, 43, 57. "God is simply the stream of tendency whereby we fulfil the law of our being." He is "the not ourselves which makes for righteousness." His brief abstract of the Creeds (p. 229) is undoubtedly witty, but it may be a question whether in subjects so solemn the wit is not a little out of place.

† *Literature and Dogma*, p. 21. The "religion" of which Mr. Arnold speaks in *God and the Bible*, p. 135, does not seem to answer to his definition, though he declares there that he uses the word "in the only sense which our race can now attach to the word religion." In the next page he speaks of "the as yet irreligious religions." This is really very perplexing. Were they "moralities touched by emotion," which were nevertheless immoral, and which no "emotion" had touched? At all events he goes on to say that the "ceremonial and rite" they "handed down" had "their proper origin not in the moral springs of man's nature at all."

stances; whereas, if it is to be worth anything, the power which impels us to what is good should be above all things steady and enduring. It would be anticipating were I to enlarge now upon a third point, that one of the chief objections to Mr. Arnold's definition of God is, that it makes emotion impossible, at least in religion.* That "morality touched by emotion" is a sufficient definition of religion I am, therefore, not disposed to admit; though I am ready to grant that emotion may have an important part to play in disposing us to religion, and that it ought to be capable of being evoked by the idea of God.

10. Starting with an incomplete and unsatisfactory definition of religion itself, Mr. Arnold proceeds to lay down the proposition, that nothing is to be believed which is not directly verifiable (Preface, p. x.). The reason that he gives (p. 42) for not believing in a "Personal First Cause, the moral and intelligent governor of the world," is, that it is not "admittedly certain and verifiable." But before this can be admitted as a sufficient reason, it must be proved that nothing is, or ought to be believed, but what is "admittedly certain and verifiable by reason," in other words, that a revelation is an impossibility. No doubt it may be useful for those who have lost their hold on revelation to be reminded how many of its truths are "admittedly certain and verifiable." "I believe in *this*," says Kingsley's hero, Lancelot, in "*Yeast*," stamping upon the earth, and he is the type of a good many men; but even his belief in "*this*," when carried into practice and corrected by the effects of an earnest attempt to follow his conscience and do his duty, is supposed to have led him, as it has led many others, to believe in much else beside. To such persons it may be well to say that even those truths which are thought least "verifiable," are capable of much verification; that the experiences of the soul are as much facts as the functions of the body; that the inner history of man, his cravings and how they were satisfied, his prayers and how they were answered, his beliefs and how they were formed, are as much real history as that of the Greeks and Romans, or that of the crust of the earth; that the spiritual forces which produced prophets, apostles, saints, are as real, unless we entirely abandon our ordinary use of the laws of evidence, as the intellectual forces which have given us poets, philosophers, and statesmen, or

* "We can adore a *Person*, but we cannot adore *principles*."—Robertson, Lect. V. on Epist. to Corinthians.

the physical ones by which stars revolve in their orbits, and elements arrange themselves into their various compounds. Yet however much of Christianity may be capable of "verification,"—and I believe that far more of it is so than is generally believed,—still to assume that a revelation is impossible; that nothing is to be accepted as true but what is capable of scientific demonstration, that is, what has become practically certain by induction from a sufficient number of carefully ascertained facts,—is an assumption of the very gravest kind. We may believe, if we please, but we cannot possibly know, that man has no faculties beyond his reason for comprehending the unseen. We can have no certainty whatever that it is impossible for God to reveal Himself, apart from all argument, all logical demonstration, all evidence of visible facts, to the man who will purify his soul by the discipline of walking by the light he has, so as to become fit for the reception of more.*

11. Another very strong point with Mr. Arnold is that the language of the Bible is not precise or scientific in its character, but fluid, literary, indefinite. (Preface, p. xv.) There may be some truth in this statement, but it cannot be received without great caution. That all the terms in the New Testament were as strictly and rigidly defined as is necessary in a philosophical investigation, is more than we have a right to assert; but we have no right whatever to rush to the opposite extreme, and declare that they are loose and inaccurate. The writers of the New Testament must have been singularly unfit for their high mission, if they expressed what they had to say in any terms but those capable of being intelligently understood by those whom they addressed.† It is scarcely conceivable that the greatest intellectual triumph the world has known, the triumph of Christianity over the forces arrayed against it, could have been effected by a collec-

* See St. Paul, Epist. to Corinthians, ch. ii., where he insists on the existence of a spiritual faculty by which truths of the spiritual order were tested and examined (for this is the usual meaning of the Greek word he there employs).

† Aristotle (*Ethics*, Book I., ch. ii.; Book II., ch. ii.) says that terms ought to be defined with as much exactness as the circumstances require. The circumstances in this case demanded as much definition as may be sufficient in order that they may become a basis of action, i.e., sufficient to enable men to comprehend their general drift and bearing. A closer definition may be necessary before they can safely be assumed as postulates for argument. In the above-cited passage Aristotle expressly asserts that less rigid accuracy in definition is necessary for practical purposes than for theoretical researches.

tion of hazy ideas, expressed in indefinite language. Religion, if it be chiefly an affair of the heart, has for its object the conquest of the mind also, and what is of more importance still, the direction of the will. But it could hardly have attained those objects if its fundamental ideas were incapable of being practically realized,—if all the utterances about the Fatherhood of God and the Redemption of Man, about Salvation through Christ's Blood, and life through His Resurrection, —were mere loose rhetorical phrases, to which no precise meaning could be assigned. If there be anything which St. Paul was not, it was a "literary man" in the usual sense of the term,—that is, one who takes up literature as a business or an amusement, who writes either for pay, or for his own amusement, or that of others. If he had any object in life, it was a severely practical one, to bring every one with whom he came into contact into obedience to the law of Christ. It is hardly probable that with this intensely practical aim before him he would have employed "fluid, passing, literary" language, the language of a man not in earnest, but only desirous of attracting a temporary attention. Moreover, as a matter of fact, it has not occurred to the majority of the readers of St. Paul, for instance,—indeed to any of them until lately,—that he did not know what he meant by the words he used. It has generally been supposed that any difficulty of understanding him arises from the depth of his thoughts, rather than from any vagueness or indefiniteness in the language in which he conveyed them. It seems at least probable that if there be any vagueness or indefiniteness in our apprehension of the great truths contained in the sacred writings, the fault is all our own. We have approached them fettered by traditional prejudices of one kind or another, instead of with a full desire to unlock their inner meaning. We have but to go back to the time in which their words were uttered, to study the meaning they bore in that age, and there will be quite sufficient to enable us to form a conception of the main doctrines of our faith,—sufficient, at least, for the purpose for which they are designed, namely, to guide us through the dangers, the difficulties, the otherwise unsolved problems of our earthly life. I might say more. I might add that so infinite is the wisdom contained in the sacred Scriptures, that men who approach them in the proper spirit, men who are desirous to be enlightened by them, rather than with patronizing airs of superiority to point out their blunders, have advanced, and are still advancing, in the comprehension of their meaning. Faith, patience, self-renunciation, freedom

from prejudice, earnest search after truth, have found the key to many a riddle which has baffled previous ages. And where the man of "culture" only sees a set of enthusiasts who are putting their own interpretations upon language which is "fluid, passing, literary," utterly and entirely indefinite, the "spiritual man," to use St. Paul's words, sees only a band of earnest labourers, busy in digging out from an inexhaustible mine, fresh stores of precious material wherewith to build or to adorn the Palace of Truth.

12. I proceed to consider Mr. Arnold's mode of dealing with the Bible. I have already treated of two of the subjects on which he remarks, namely, Miracles and the Fourth Gospel, in two volumes, which are in the possession of the Institute.* I need not, therefore, take up the time of the meeting in repeating what I have there said. But I may be allowed briefly to refer to his mode of dealing with those subjects. He says, and we have already admitted it, that in the Jewish and Christian Churches alike there has been a tendency to what he calls *Aberglaube*, or extra-belief; that is, that there has been a tendency to mingle the human with the divine, the conclusions of reason with the truths of Revelation. But when he proceeds to tell us what this extra-belief is, we are forcibly struck with the fact, that not only does he sweep away at once the greater part of New and Old Testament alike, but he supplies us with no definite principles by which we can separate the real original revelation or belief from the human accretions wherewith it has been overlaid. Thus he dismisses with equal contempt the first disciples of Christ, whom He chose to disseminate His doctrines, and the theologians of mediæval and modern times. He eliminates by a stroke of the pen all Miracles, Prophecy, belief in the Fatherhood of God, Messianic ideas from the Old Testament; all Miracles, fulfilment of prophecy, creeds, eschatology, and even the Resurrection of Christ, from the New. Yet when we come to inquire how this extremely difficult task of separating the true from the false, the extra-belief from the original revelation, is accomplished, there is not a single word to guide us. Mr. Arnold's method is charmingly, it is refreshingly simple. That is original Christianity, or original Judaism, which Mr. Arnold thinks is so; that is *Aberglaube*, or extra-belief, which it pleases

* *The Rector and his Friends*, Dialogue 6, *Miracles and Special Providences*, and the *Doctrinal System of St. John*.

Mr. Arnold to call by that name.* Now I venture to think that such a mode of dealing with the Christian, or in fact with any other religion, is not a fair one. Unless a man claims to be himself a prophet, to be a man endowed with a supernatural authority from on high—qualifications which Mr. Arnold would not only disclaim, but which he very distinctly affirms to be unattainable by man—he has no right whatever, as I have already observed, to require us to accept his *ipse dixit*.† His arguments must be like mathematical *formulae*, which can be applied, not only by their discoverer, but by all other men. And therefore, instead of asserting that this or that is original Judaism or original Christianity, and this or that is Aberglaube or extra-belief, Mr. Arnold should have furnished us with canons of criticism unfailing in their operation, by which we should be capable of “verifying” his conclusions for ourselves. Otherwise, it is quite possible that among the things not “verifiable,” and therefore not binding upon our acceptance, may be found not a few propositions advanced by Mr. Arnold himself.

13. Let us then observe Mr. Arnold’s mode of dealing with the Scriptures. First, he rejects Prophecy. Let us inquire on what grounds. First, he tells us that there is “nothing blamable” in men “taking short cuts, by the help of their imagination, to what they ardently desire, and telling themselves fairy tales about it.” Then he goes on to defend presentiments, and informs us that they “may be true.” But when he comes to deal with the question whether prophecy has really been uttered or not, he takes two or three prophecies which have been disputed, assumes that his own interpretation

* He admits the extreme difficulty of entering into a critical examination of the Scriptures, and excuses himself from the task by saying that he is not called upon to enter upon it (pp. 176, 180, 283, 287, 288). But, surely, if any one is called upon to undertake this task, and to carry it out most thoroughly, it is the man who insists so much upon the necessity of sifting the Scriptures, and of separating the bushels of chaff from the grains of wheat therein.

† He makes an attempt at some sort of demonstration in p. 335, but it resolves itself into an *ipse dixit* at last. “The more we know of the history of ideas and expressions, the more we are convinced that” the account of their faith ordinarily given by Christians, “is not, and cannot be, the true one.” Why? Mr. Arnold does not tell us. He goes off into an inquiry what Dr. Newman’s opinions might have been if that divine had been “born twenty years later, and touched with the breath of the *Zeit-Geist*.” An interesting line of inquiry, no doubt, but hardly, one would think, germane to his subject. He next touches lightly and gracefully upon the Homeric poetry, and then winds up with the apophthegm, “Demonstration in such matters is impossible,” in which he is doubtless quite right.

of them is the true one, and then curtly dismisses prophecy to the limbo of exploded figments of the imagination! This is just as if a barrister, in conducting a case against a vast quantity of hostile testimony, were to assert that the character of three out of the one hundred and fifty witnesses on the other side had been called in question, to assume that the whole of the one hundred and forty-seven others were unworthy of credit, and then triumphantly call upon the jury to find a verdict for his client. Surely whatever "Aberglaube" there may be in the Christian Church of the day, it is not to be dispelled by such a method as this! Surely, moreover, the belief in prophecy, which has commanded the assent of some of the greatest minds that the world has ever known, can hardly be disposed of by how great a master soever of argument within the compass of nine octavo pages!

14. I may, however, be permitted to pursue one portion of his brief prophetic argument a little more into detail. Jesus, says Mr. Arnold, was not the sort of Messiah the Jews expected, and, he implies, not the sort of Messiah prophecy had entitled them to expect (pp. 79, 80). To "fuse together" the most antagonistic prophecies into an application to one person is, in his opinion, a "violent exegetical proceeding" (p. 92). Yet he mentions, in another part of his work, that the Jewish prophets, in their anticipations of the future, proceeded on three lines of thought (p. 217). The first spoke of a Lion of the tribe of Judah, who should restore the kingdom to the seed of David, and go forth to conquer the earth. The second spoke of a light to lighten the Gentiles, who should set judgment in the earth, and for whose law far lands should wait. The third spoke of one who was oppressed and afflicted, whom it pleased God to bruise, whose soul was made an offering for sin, who was wounded for our transgressions, who was bruised for our iniquities, by whose stripes we are healed. Well may Mr. Arnold say, at the close of each description, "Who is this?" He does not answer his question, he cannot answer it. There was One and One alone who answers to either description, and it is Jesus of Nazareth. "The Jews did not identify the three"—probably not. But they are identified in Christ. He, the Son of David, *has* triumphed and *does* reign in the earth. The Gentiles *have* "come to His light, and Kings to the brightness of His rising." And the whole Christian Church for eighteen centuries has seen in Him the Man of Sorrows and acquainted with grief, Whose sufferings and death have been the great Atoning Sacrifice for the sins of the whole world. Mr. Arnold does not dispute that these passages were written

long before there was any prospect of their fulfilment. He can scarcely, I think, refuse to admit that there is something not a little remarkable in the fact, that these apparently divergent and antagonistic lines of thought have been so strikingly reconciled in the life and death of Jesus Christ, as related by the Evangelists and explained by the Apostles.

15. The question of Miracles* is dealt with in a somewhat less summary manner than that of prophecy. Thirty-two pages are devoted to this subject. Yet even these contain so grotesque a misrepresentation of what Christians hold upon the subject, that it is scarcely possible to understand how it could have been written. We are told that if the writer of the pages I am considering were to change the pen with which he wrote them into a pen-wiper, he would thenceforth, in the common opinion of mankind, "be entitled to affirm, and to be believed in affirming, propositions the most palpably at war with common fact and experience."† I am not concerned to defend the "judgment of the mass of mankind," but if this is intended as a description of the grounds on which an intelligent Christian man believes in the miracles of Christ, it is singularly wide of the mark. The belief of the great mass of Christians is, that Christ was God manifest in the flesh, and that therefore, as the Creator and Governor of the world, He could at His Will, either by the suspension of the laws of nature, or by calling one force into play to counteract another, produce results at variance with our ordinary experience,‡ and that as thus manifesting Himself to

* Thirty-two pages are also devoted to this subject in *God and the Bible*, but they wander much from the point. A good deal of space is taken up by parodies of passages from the Old Testament in which the word "God" is replaced by "Shining," Mr. Arnold being apparently ignorant of the fact, that the word translated "God" has in the Hebrew no such meaning. In the Semitic languages the word "God" is derived from the idea of *strength*. In eleven pages only does he grapple with the real question, and his reasoning is but a repetition of that in *Literature and Dogma*. He avoids the real question, and attempts, by casting doubt upon a few of the New Testament miracles, to lead his readers to believe that he has disposed of them all. Not the slightest allusion is made to the cumulative evidence afforded by the immense mass of miracles reported in the New Testament, which are not only an integral portion of the story, and cannot be separated from it without destroying the whole, but which are the sole explanation of the sensation caused by the teaching of the meekest, and lowliest, and most unobtrusive of men.

† *Literature and Dogma*, p. 128.

‡ It must be remembered that this is a power which even man possesses, at least within certain limits.

be the Lord of Nature and Creator of the Universe, He had proved His right to call upon us to believe Him when He informed us on matters which are altogether outside the range of "common fact and experience." The strongest reason assigned for rejecting miracles appears to be, that "the human mind, as experience widens, is turning against them," an assertion which may or may not be accurate, but is certainly hardly conclusive.* It is true that all this is followed by an endeavour to put ecclesiastical miracles on the same ground as Biblical ones,† and that some prodigies related by the heathen historians are mentioned; but there is no notice taken of the entirely different nature of the evidence by which these prodigies are supported. We are told, again, that St. Paul was mistaken on a matter of fact, in supposing that our Lord's second coming would soon take place, forgetting that our Lord Himself is reported as having said that no man should know the day or the hour of His coming; and in a matter of argument, when he grounded a belief in the coming of Christ on the use of the singular instead of the plural number in the prophecy in Gen. xii., though how these mistakes, if they be mistakes, which Mr. Arnold does not attempt to prove, can invalidate the plain statement that miracles were performed, which is repeatedly made in the New Testament and underlies the whole of it, I cannot exactly see. He tries to make out a contradiction between Acts ix. 7 and Acts xxii. 9, and dismisses without examination the explanations which have been given. And this is nearly all he gives us as a reason for abandoning altogether the belief in miracles.‡

16. We next come to his mode of dealing with the books of the Bible themselves. First of all, he refers to the theory that the writers of the Old and New Testament "were miraculously inspired, and could make no mistakes." I do not propose to enter upon this question, but will content myself with the remark, that if the writers of the Old and New Testament were wrong on the most important points—wrong in their historical narratives, wrong in their prophetic utterances, wrong in their conceptions of God, wrong in attributing miracles to Christ, wrong in believing Him to be God, wrong

* So we are told, that "it was not to discredit miracles that *Literature and Dogma* was written, but because miracles are so widely and deeply discredited already."—*God and the Bible*, p. 386. It is therefore "lost labour to be arguing for them."—*Ibid.*

† I have touched upon this objection in the dialogue above-mentioned.

‡ Save as regards the Resurrection, which will be treated below.

in believing Him to dwell in mankind through His Spirit,—wrong in declaring, as they all do, that He rose from the dead—there seems very little left in which they were right. And therefore it seems altogether unnecessary to try and save that infinitesimal residuum from the general wreck. If the writers of the Old and New Testament were incapable and untrustworthy on the great majority of points on which they wrote, including by far the greater part of their teaching concerning God, and by far the greater part of their statements on matters of fact, it would seem more natural to discard them altogether, and trust to our own consciousness to evolve the necessary power “that makes for righteousness.” But if, on the other hand, there be any real significance in the Bible and Jesus, as Mr. Arnold says there is,* it might be as well to treat both with a little more respect, and inquire a little more carefully into the declarations contained in the Bible which have been so hastily cast aside.

17. I can only pause to give one or two instances out of many of the manner in which the writers of the Old and New Testament are dealt with. We are told that the prophecy of the Judgment in the 7th chapter of the Book of Daniel “was written in the second century before Christ,” as though there could be no doubt of the fact. Not a word is said to remind the reader of the elaborate and able treatise of Dr. Pusey on the Book of Daniel, in which he shows—first, that the theories which assign a later date to that book are the fruit of an *à priori* assumption that prophecy is impossible; and next, that every attempt to explain the prophecy of the 490 years on the Maccabean theory has failed—that each has been raised upon the ruins of its predecessor, only to be supplanted by another yet more extravagant, and doomed to fail more hopelessly. Is it quite fair to the non-theological reader to give no hint of this? The excuse can hardly serve, that Dr. Pusey is an unknown or a contemptible writer. Whatever we may think of his teaching, there is no man who has left a more indelible impress upon the present generation than he. Nor can it be contended, that this particular work is unworthy of his high reputation; for there is none of his works that have commanded such general admiration as this one, and men who on other points maintain, most strongly, views antagonistic to those of the learned Doctor, have expressed in public their strong approval of this treatise, and their deep

* *God and the Bible*, Preface, p. xliii.

sense of the service it was likely to render to revealed religion. Under these circumstances, the calm assumption of the Maccabean origin of the Book of Daniel can hardly be regarded as characteristic of the earnest seeker after truth, but appears much more like an unfair attempt, of a kind unfortunately too common, to discredit Christianity in the eyes of those who are ignorant of its apologetic literature, by the insinuation that nothing has or can be said in its defence.

18. The question of the authenticity of the New Testament has attracted a larger share of attention. A large portion of the work *God and the Bible* is given to an examination, and a good deal to a defence of the Fourth Gospel. But the conclusion is, that our Gospels "were probably in existence and were current by the year 120 of our era at the very latest,"* and that they grew up by continual alterations and interpolations into their present shape. Now, this is simply a question of criticism. The narratives of the New Testament are as complete in their form, and have at least as early testimony in their favour, as any other books. They are consistent and coherent in their parts, proceed upon a definite plan, and the Gospel of St. Luke, as well as the Acts, is remarkable for its special claim to authentic information. If they be interpolated, it is impossible for any one to say where the interpolations occur. No break in the narrative, no interruption of its continuity, no strange and incompatible sequence of thought, betrays the hand of the reviser. Nor have we more than two or three remarkable variations in our copies. The story of the woman taken in adultery, that of the angel troubling the pool of Bethesda, and another passage of extremely trifling importance, in Acts viii., are all that can be advanced.† This is not the history of interpolations, so far as we have any experience of them. A narrative which has gradually grown up in this way would present us with a text in inextricable confusion. We should have manuscripts with and manuscripts without the added passages, longer and shorter recensions,‡ clumsy attempts at reconciliation and at a restoration of the true text, till the editor, bewildered by the confusion before him, would be compelled to abandon the effort to

* *God and the Bible*, p. 373.

† *God and the Bible*, p. 376. It is well known that there are several singular interpolations in the *Codex Bezae*, but they are confined to that MS., a remarkable confirmation of the argument above.

‡ As in the case of the works of Cyprian and the Ignatian Epistles. The latter have come down to us in three forms.

recover the original narrative in despair. There is nothing of the kind in our present copies of the New Testament. In the two cases which have been advanced—I may safely neglect the third—there are extremely probable, if not absolutely certain, reasons to be given for the omission of the passages referred to. Again, there is the argument from undesigned coincidences, so ably handled by Paley and Blunt, which makes it absolutely certain that we have the Gospels and Acts as they were originally written.

19. And there is another consideration of no slight importance which has been overlooked. There is a natural and absolutely insatiable curiosity for accurate details concerning men who have made a figure in the world's history. Putting aside the question of Revelation for a moment, it will hardly be denied that one of the most remarkable characters in history is Jesus Christ. Is it credible, that with the biographies and authentic accounts, published by their disciples, or, at least, compiled soon after their death, which have come down to us of Socrates, of Mohammed, of Dominic, of Francis of Assisi, of Luther, of Calvin, of John Wesley, of Edward Irving, that the thirst of Christians for biographies of their Master would have allowed them to wait nearly a whole century, and would then have been slaked by a clumsy *rifacciamento* of old stories and new legends, a working up of authentic histories which were unaccountably allowed to perish, with later and invented details which, to the certain knowledge of most of the older disciples of Christ, were untrue? Verily, this is a remarkable deviation from the ordinary conduct of mankind! and a singular foundation for the success of a religion, one of whose chief boasts it was, that it proclaimed the truth, nay that He Whom it proclaimed was Himself the Truth!

20. I have but one remark to add concerning the genuineness of the Gospel history. If we compare the evidence for the authenticity of the Gospels with that for any other books, it is simply overwhelming. Schlegel is content to base his belief in the genuineness of one of Sophocles' plays on the fact, that it is quoted as his, nearly four centuries later, by Cicero.* Compare this slender evidence with the immense mass of testimony collected within two centuries in favour of the Gospels, and ask whether, on such principles, it were not utterly useless to attempt to write history at all, and whether it is not the determination to overthrow the strong array of witnesses in favour of Christian truth, and Christian dogma,

* *Lectures on Dramatic Literature*, Bohn's Translation, p. 109.

rather than a desire for truth at whatever cost, which leads to a method of investigation so entirely at variance with the usual rules of criticism.

21. But it must be admitted that the conclusions Mr. Arnold has formed in his first volume, are considerably modified in his second. It is impossible for the careful and diligent student of the Fourth Gospel, for instance, to treat it as M. Renan does in the *Contemporary Review*, except he holds a brief for its spuriousness, and therefore it is no matter of surprise to find Mr. Arnold, after a closer study of St. John and his critics, writing in a much more respectful tone in his later work. It is an important admission which is made there, that "*if we had the original reports of the eye-witnesses, we should still have reports not essentially differing, probably, from those which we now use.*" We should, most likely, *not have a miracle the less.*"*

22. But Mr. Arnold cannot *quite* give up his favourite theory. The Fourth Gospel has more of Jesus Christ's authentic sayings and doings in it than he was at first inclined to suppose. The First has met with a pretty general acceptance. But there was a "preoccupation" in favour of the marvellous in their pages, just as, it may be observed, in Mr. Arnold's pages there is a "preoccupation" against it, which deprives their testimony, in the eyes of an intelligent thinker in the nineteenth century, of that weight which it would unquestionably possess did they only tell him that which he was previously inclined to believe. Since they lacked the wisdom to do this, they must be put peremptorily out of court, for "neither his immediate followers, nor those being instructed, could possess" "the pure and genuine doctrine of Jesus," "so immured were they in the ideas of their time and in the belief of the miraculous, so immeasurably was Jesus above them."†

23. The most startling example, however, of the manner in which this inquiry is pursued, is certainly the passage in which it is argued, that the Resurrection is a myth which has gradually grown up. In order to prove this, the narrative is most strangely distorted. We are told that Jesus was not known by Mary Magdalene, not known by the two disciples going to Emmaus, not known by His most intimate Apostles on the Sea of Galilee. There is no mention of the many occasions on which he *was* known; no reference to the manner in which on the occasions specified He made Himself known; not the most distant

* *God and the Bible*, pp. 383, 384.

† *Ibid.*

allusion to that most striking and life-like, perhaps, of all the incidents in the Gospels—"Jesus said unto her, Mary. She turned and said unto Him, Rabboni; that is to say, Master." Nor is there a hint that the Apostle St. Paul, in his explanation of the theory of the Resurrection, laid it down that the Resurrection body would not correspond in outward form to the natural one; that the one would bear about the same resemblance to the other as the seed to the plant; that "it was sown a natural body, it was raised a spiritual body"; and that, therefore, recognition might naturally be supposed to be only possible in the way described in the Gospels.* The Resurrection has been often attacked, and has been often defended, but if it is to be ultimately overthrown, it must be by a careful and accurate examination of the evidence, and not by an incorrect statement of the facts, and a pre-determination to ignore the one supreme fact that every writer in the New Testament proclaims the Resurrection; that it is made the basis of the whole Christian system, and that one of its chief teachers declares that if Christ be not risen, his preaching is vain, and the faith of his hearers is vain also. It is absolutely contrary to the law of evidence that a community can have been founded on the faith in a certain fact, and that fact a legend so palpably invented that we can "see it growing under our very eyes." A distinct and irreconcilable schism must at once have severed the genuine disciples of Christ's doctrine from His credulous and fanatical adherents, had Mr. Arnold's theory been true. We should have been able to trace the growth of an extravagant and fanciful belief, the divergence between the reasonable and unreasonable followers of Jesus, as we can trace the history of every other remarkable intellectual movement which occurred in a civilized country and a civilized age. But as there is no such evidence of the growth of the legend, not the slightest sign of such divergence; as the testimony of Christ's disciples was as clear at first as at last; as we find neither among Jews nor Gentiles, Judaizers nor anti-Judaizers, the followers of St. Paul or the opponents of his authority, any attempt to deny the resurrection of Jesus,† the laws of

* Compare also 1 Cor. vi. 13, Phil. iii. 21, and the saying of our Lord recorded in St. Matt. xxii. 30.

† Neither Hymenæus and Philetus, nor the persons refuted in 1 Cor. xv., denied the Resurrection of Christ, or some of St. Paul's arguments in the latter chapter would have been absurd. And it is to be remarked that even the early heresies, the systems of Cerinthus, Basilides, and Valentinus, all bear

historical evidence give us only two hypotheses to choose from. Either the first preachers of the religion of Christ were guilty of a deliberate imposture, or Jesus Christ is actually risen from the dead.

24. I now come to the most important feature of the volumes which are before us. The one conviction which Mr. Arnold pursues with the most inextinguishable ridicule is that which regards God as a Personal Being. The only description of Him which Mr. Arnold will allow to be in any way "verifiable," is that He is the stream of tendency whereby all things fulfil the law of their being, or, since righteousness is very properly acknowledged to constitute the primary law of man's true being, "the not ourselves which makes for righteousness." This conception he admits that Israel by degrees personified for itself, but he repeatedly denies that this personification formed any portion of Israel's original idea of God. He tells us that the Jews called this perception of a something without us, urging us to righteousness, by the name of the Eternal. But he forgets that, according to the best authorities, the unutterable name Jehovah is only the third person singular of the verb "to be," and is therefore simply the expression of the truth revealed to Moses in the Bush. He says, and he quotes Gesenius as an authority for the statement, that the explanation of the word Jehovah, which would confine it to the assertion of God's Existence without adding the conception of His Eternity, would be a frigid and unsatisfactory one, and he is quite right. But he omits to inquire which is the primary and which the secondary idea implied in the word. He does not observe that the word implies self-Existence—the "great Personal First Cause" which Mr. Arnold dismisses with such contempt, while the *tense*, which implies a continuous or unfinished action,* is the portion of the word which implies Eternity.

25. And then we are led off to a disquisition on the derivation of the word "*is*," "*essence*." It signifies originally *to breathe*, and thence we are invited to conclude that the idea of existence, or rather, essence, in early times was nothing but the idea of

witness to the fact that the Resurrection of Christ was the doctrine of the Christian Church, though they invented all kinds of strange myths to account for it. This is the precise opposite of "a legend growing under one's very eyes." On the contrary, it was a stubborn fact, the evidence of which the early heretics would have evaded if they could, but they found it too strong for them.

* See Ewald's *Hebrew Grammar*,—Tenses of the verb.

breathing! The substitution of the one word for the other, which Mr. Arnold attempts, would lead to some very singular results if applied to his own pages.* But the fact is, that the derivation of the word is only another instance of what is so common in the language of children, and of races of men in their infancy, the employment of the concrete for the abstract. There seems some reason to suppose that the language of man in early times was confined to a few words, and those words connected with his most pressing wants and the ordinary phenomena around him. By degrees, as those phenomena were often seen to be the result of some invisible power, the word which originally referred to the external manifestation was transferred to the hidden principle within, and another word (generally equally onomatopœtic) took the place of the former to denote the external action.† To forget this, to attempt to define every word that is used, without admitting the existence of some primary intuitions which are antecedent to demonstration, is to make all language and even thought impossible, to reduce ourselves even below the level of the brutes by rendering us incapable of communicating with one another.‡ We may puzzle ourselves with Mr. Arnold,

* A few instances may be given at random. "God *breathes* here at bottom a deeply moved way of saying conduct or righteousness."—*Literature and Dogma*, p. 47. "But God is not a *Person*, and such a "terrible abstract" (*God and the Bible*, p. 77) cannot *breathe*." Again (*Literature and Dogma*, p. 199), "God *breathes* an influence"—Mr. Arnold's version of "God is a Spirit." Compare Mr. Arnold, in *God and the Bible*, p. 77, and observe how the abstract becomes the concrete, and the concrete the abstract, at his bidding.

† Mr. Arnold declares (*God and the Bible*, pp. 80, 81) that the word is significant to *breathe*, and the word to *exist* means to *grow*, to *step forth*, and that all these denote certain *activities* belonging to humanity. This is one of his improved sayings, for which it would be well if he would advance a little proof. There is at least some ground for the opposite assertion in many languages. Thus, in Hebrew, *רוח* signifies originally to breathe, but it became in the end the recognized word to represent that which was the *cause* of the phenomenon, while other words, as *נפש*, *נשמה*, *נפח*, *נפח*, &c., sometimes kindred and sometimes not, were used to represent the visible action. The same is the case in the kindred Semitic languages. So the Greeks used *αἶμα* and *φύω* to represent the cause, i.e. *existence*, *φύω*, *πνέω*, and *αἶμα* for the phenomenon *breathing*, *growing*. The Latins have their *anim*, *es*, *fu*, and their *augeo*, *flo* and *spiro*. The Germans their *bin*, *ist*, *seyn*, as well as their *blasen*, *athmen*, *hauchen*, *wachsen*: and we ourselves our *be* and *is*, as well as our *puff*, *breathe*, *blow*, *grow*. Dr. Curtius, Mr. Arnold's authority, may have "succoured a poor soul whom the philosophers had driven well-nigh to despair." But Dr. Curtius only tells us what the *root* of our word is. He does not tell us that *ero* means, "I will go on *operating*," though no one denies that it means, "I will go on *living*."

‡ The truth of this may be easily proved: Ask any one who addresses

by analyzing Descartes' proof of existence;* we may bewilder our minds about the existence of matter; but unless we take something for granted, unless we consider ourselves entitled to assume that the phenomena of the visible world and the forces that obviously underlie them are facts, which we may regard as the basis of all argument, there is no other conclusion open to us than that of the philosophic poet in *The Rejected Addresses*, that "nought is everything and everything is nought."

26. When Mr. Arnold contends, in defence of his position that there is no personal God, that the words used in the Bible are not capable of scientific demonstration, but are "thrown out," as it were, at "something beyond our power to grasp," he is on safer ground. No one, not even the most illiterate of the believers in His Personality, believes that he can comprehend God. But, because we are unable to comprehend God, it does not follow that we can comprehend nothing about Him. We speak of a mountain, and, when we do so, we form a definite conception of what we mean, but we do not say that we know all about the mountain. We see it from one point of view, and it impresses us with an idea of size and form which is definite, and true so far as it goes. We travel round it; we obtain glimpses of it from different points of view, we correct and improve our first impressions, but still we cannot form any idea of it as a whole. Yet will any one assert that we have no idea of it at all, or that the idea we have is incorrect? We proceed further. Since the whole of the interior of the mountain is still unknown to us, we collect specimens from various parts of its surface, and form conclusions as to the materials of which it is composed. We have made another advance in our diagnosis, we have learned something, not only of its form, but of its properties, and that something is indisputably true. Still, we have formed but a very inadequate conception of the great reality which stares us in the face, and which transcends our powers to comprehend as a whole.

27. Or we may take an instance from the heavenly bodies. There is much in the conditions of existence of the sun that is entirely beyond our conceptions. Of the properties of substances exposed to the enormous pressure and intense heat to which they are exposed in the sun, we can form no idea. Yet do

you to define every word he uses, and every word employed in his definition and conversation is at once reduced to a ludicrous absurdity.

* *God and the Bible*, p. 66.

we therefore know nothing of the sun? Is it altogether impossible to form a definite conception of him? Are our ideas of him, as the great vivifying power of animal and vegetable life, whose threefold beams diffuse light, heat, and chemical influences throughout the earth, merely inexact ideas "thrown out," at something which we have no power to grasp, or are they not perfectly exact and true in themselves, though they by no means exhaust the properties of that to which they belong?

28. The late Dean Mansel, whose powerful treatise Mr. Arnold, as is usual with the assailants of present day Christianity, ignores,* points out the intellectual difficulties in the way of combining the idea of the Personal with the idea of the Eternal, yet he shows that we may be able to form a true conception concerning some of the attributes of God which the word *personality*, inadequate though it be, is the only one capable of expressing.† And if it be asked, why insist upon the use of a term which, if confessedly inadequate to express the truth in all its fulness, is sure to be also misleading? we reply, because, to omit to use it would not only be misleading also, but would lead us much farther from the truth than the other horn of the dilemma. In the former alternative we use language which is insufficient to express all the truth, in the latter we use language which is actually contrary to truth. And there is no third course open to us. We must either affirm of God those attributes, of

* Mr. Arnold gives a kind of reason why he does not answer the Bampton Lectures of Professor Mozley, in *God and the Bible*, p. 41. It is ingenious, but hardly satisfactory. It has since been done, he says, by the author of *Supernatural Religion*. That is to say, that some one else has done what Mr. Arnold ought to have done himself. Or, if Mr. Arnold contends that it would be "vain labour," because "the human mind is losing its reliance upon them—i.e. miracles," it may at least be asked whether it is not the duty of the human mind to give the whole matter its fair and candid consideration, and whether it can be considered either fair or candid to ignore altogether what is said in arrest of judgment upon the most important questions in heaven and earth. As far as Mr. Arnold's treatises are concerned, a stranger to the whole question might imagine from them that all the writers on the Evidences were Butler and Pascal, and those extremely ridiculous and contemptible persons the "Bishops of Winchester and Gloucester."

† I am aware that Dean Mansel's volume led to a lively controversy, even among the defenders of Christianity. Whether Dean Mansel were right or wrong, it is not my present intention to inquire. I only wish to call attention to the fact that his brilliant and masterly treatise is as utterly ignored by Mr. Arnold as if it had never been written, a very convincing proof that the attitude of modern "culture" to Christianity is not that of thorough, honest, impartial inquiry.

which the word personality is the best expression, or we must implicitly deny them. We must either speak of God as "He" or we must speak of Him as "It," that is, in spite of all Mr. Arnold may say to the contrary, we must either give the impression to those to whom we speak of Him, that God is a Person, or that God is a thing; that He is something higher than ourselves, to which we instinctively look up, or that it is something of an inferior order of being to ourselves, on which we as instinctively look down. For complain as we may of the notion of limitation attached to the word personality, it at least serves to bring before us the higher and nobler qualities of our humanity. Personality implies the idea of a Free Agent, who acts, not from blind necessity, but by the counsel of His own will, which in God's case operates, we believe, in accordance with the dictates of Eternal Reason. And when we apply the term to God, we mean also to say that He is capable of those moral attributes of love, pity, care, guardianship, providence, which are infinitely higher than the mere mechanical action of an impersonal power. Tell me that my idea of a Personal God is anthropopathic, and I reply that we can only approach to the idea of God by contemplating the noblest attributes of the noblest being we know.* Tell me that God is infinite, and that He, therefore, is incapable of being conceived by man, and I reply that space, too, is infinite, but that this does not prevent me from knowing that it is peopled with stars and star dust, and that the part of it within my ken is capable of being conceived, and is governed by the simplest and most intelligible of laws. Tell me that the God of our Thirty-nine Articles binds me to regard God as "without passions," and I reply that the attitude towards His creatures implied by any one of the words I have just used, is possible without the emotions which in us finite beings are usually supposed to attend it, and that the emotions of our finite humanity presuppose something in the Infinite to correspond to them.

29. And, lastly, I would observe that God is represented to us throughout Scripture as our Father, as one to Whom prayer can be addressed, and Who will condescend

* Forgetting that superstition supposes a real and undeniable desire in human nature, the spirit of Deism casts away from it all notions of God's anger, judgments, or punishments, as representations arising only from the limited nature of the human understanding.—*Neander, Church History*, vol. i. Introduction.

to hear and answer it. Mr. Arnold has endeavoured to represent this as part of Jewish and Christian Aberglaube, though to assert this is to rend both Old and New Testament asunder, and to present us with a few disjointed fragments, as the whole of Jewish or Christian belief. He declares* that Israel, *whatever our Bibles may say*, said from the first that God was "the Eternal not ourselves that makes for righteousness" and nothing more. But why should not the two ideas be united? Is there anything incompatible in them? Does not Moses† combine them when, after speaking of God as "a God of truth, and without iniquity, just and right is He," goes on to say, "Do ye thus requite the Lord, O foolish people and unwise? is He not thy Father that bought thee? *hath He not made thee and established thee?*" And does Mr. Arnold seriously mean to maintain his *obiter dictum* that the "account of creation" with which the Bible opens, and the truth of which is assumed throughout, "all came to" the writer "from the idea of righteousness"?‡

30. The truth is, that if we once surrender the doctrine of the personality of God, however inadequate the term may be to express our meaning, we have robbed religion, even according to Mr. Arnold's definition of it, of its main-spring. Mr. Arnold may expurgate the Bible, and enlarge on the immense practical advantage those will gain who adopt his method; but what is religion without an All-Father? What is it in the hour of strong temptation, when the "stream of tendency" whereby we fulfil the law of righteousness seems almost to have ceased to flow? What is it in the hour of trial, of sickness, of despondency—what in the agony of fruitless remorse? Men in old time often died by their own hand, and that because they believed either in Mr. Arnold's God, or else in the irreversible decrees of a Fate by which Jupiter himself was bound. What but the belief in a Father, merciful and gracious, who loves those whom He chastens, can preserve us when pressed down by accumulated anxieties, from giving way to despair? And what is left, I would further ask, to train up a child in the ways of that righteousness which Mr. Arnold has so much at heart? I have elsewhere remarked,§ that the poets have ever recog-

* *Literature and Dogma*, p. 38.

† Mr. Arnold does not impugn the Mosaic origin of the book of Deuteronomy.

‡ Page 35.

§ *Rector and His Friends*, p. 178.

nized one of the most touching examples of what is beautiful and true in the spectacle of a child at its mother's knee, learning to lisp the words, "Our Father which art in heaven." But what the Gospel of modern culture, as represented by Mr. Matthew Arnold, would substitute for it is, "O not ourselves which makes for righteousness, be thou to me the stream of tendency whereby I may fulfil the law of my being."* Which will be the most potent method of training up a child in the way of righteousness, I leave to others to decide; but if they decide for the former—and I do not see how they can hesitate for a moment—I would remark that it would be strange indeed if the young were most successfully led into the way of truth by a way that is not true.

31. But I will not sum up my observations on this head in my own words. I will quote from that eloquent volume to which I have already referred, and to which I wish Mr. Arnold had devoted more study before he treated with such contempt the idea of a Personal God. "Personality," says Dean Mansel, "with all its limitations, though far from exhibiting the absolute nature of God as He is, is yet truer, grander, and more elevating, more religious, than those barren, vague, meaningless abstractions in which men babble about nothing under the name of the Infinite. Personal, conscious existence, limited though it be, is yet the noblest of all existences of which man can dream; for it is that by which all existence is revealed to him."† He shows how a morbid horror of what is called Anthropomorphism poisons the springs of much of our modern philosophy, and then proceeds in words which I cannot deny myself the pleasure of quoting‡:—"Fools! to dream that man can escape from himself—that human reason can draw aught but a human portrait of God. . . . Sympathy, and love, and fatherly kindness have evaporated in the crucible of their philosophy, and

* Mr. Arnold uses a similar argument himself in the Preface to *God and the Bible*, p. xiv., against calling God the unknowable. The whole passage is singularly inconsistent with the tone of his former work. "God," he says, "the name which has so engaged men's feelings, is, at the same time, by its very derivation, a positive name, expressing that which is the most blessed of all boons to man, Light; whereas, Unknowable is a name merely negative." Compare *Literature and Dogma*, p. 58. "Concerning that which we will not call by the negative name of the unknown and unknowable, but rather by the [equally negative] name of the unexplored and inexpressible."

† *Limits of Religious Thought*, Lect. III.

‡ *Ibid.* Lect. I.

what is the *caput mortuum* that remains but only the sterner features of humanity, exhibited in repulsive nakedness? The God who listens to prayer, we are told, appears in the likeness of human mutability. Be it so. What is the God that does not listen, but the likeness of human obstinacy? * Our rational philosopher stops short in the middle of his reasoning. He strips off from humanity just so much as suits his purpose, and the residue thereof he maketh a god—less pious in his idolatry than the carver of the graven image, in that he does not fall down unto it and pray unto it, but is content to stand afar off and reason concerning it.”

32. I have selected Mr. Arnold's work for animadversion, because it is an admirable specimen of the manner in which modern culture, so far as modern culture is opposed to revealed religion, is accustomed to deal with that which it opposes. In the scientific sceptic, religion has an antagonist with which it is possible to deal. His arguments are definite, and, so far as they go, logical. Either Scripture, as he interprets it, is irreconcilable with the discoveries of modern science, or his inferences from those discoveries conflict with Christianity. But the man of culture is an opponent altogether intangible. He does not argue, he speculates; he gives, not his reasons for disbelieving revealed religion, but his impressions concerning it. From his point of view, nothing more is required to justify unbelief than that it is widespread; whether it ought to be widespread or not is a question he never thinks

* God is found not “to be a person as man conceives of a person, *nor moral, as man conceives of moral*, nor intelligent, as man conceives of intelligent, nor a governor, as man conceives of governors.”—*Literature and Dogma*, p. 39. It might with equal truth be said that God cannot be conceived of as not a person, as man conceives of not a person; nor as not moral, in the sense in which we understand the word, and so on. But, in truth, the sentence refutes itself. Nothing could be more genial than the ridicule Mr. Arnold heaps upon Bishops and Archbishops for saying that God is “a Person,” the “Moral and Intelligent Governor of the Universe”; nothing more emphatic than the language in which he asserts that He or it makes for righteousness. But were Mr. Arnold to assert that God is not moral as decidedly as he does that He is not a Person, not a Governor, and the like, the only conclusion his readers could come to would be that God most certainly did *not* “make for righteousness.” All which leads to the very earnest wish that, in writing on subjects so deep and so solemn, Mr. Arnold had taken some very good advice, which was given to the world more than two thousand years ago, even according to his own computation (p. 69), in Eccl. vi.: “Be not rash with thy mouth, and let not thy heart be hasty to utter anything before God: for God is in heaven and thou upon earth, therefore let thy words be few.”

of asking. If he disbelieves in miracles, it is because they are "discredited." If he rejects prophecy, it is because its possibility is "generally disbelieved." The "current theology of the day" must be surrendered because it is "doomed." The doctrine of a personal God must share its fate, because the awful infiniteness of the subject has enabled some clever dialecticians to suggest difficulties which are easier suggested than answered. "Dogma," as Christian doctrine is called, is unpopular just now; so the cultured man of the world cries "Away with it," and is entirely indifferent to the fact, if, indeed, he is aware of it, that the "dogma" he decries, which, at least, has some claim on our attention, must of necessity be replaced by dogma which can establish no such claim. And so the grave and solemn assertions of Christians about God, assertions supported by the most remarkable concurrence of testimonies of all kinds, internal, external, philosophical and historical, moral and spiritual, are lightly cast aside, and their place taken by the confident *ipse dixit* of the essayist, or the so-called philosopher of the present day. Nothing is more characteristic of the assailants of Christianity than the boldness and recklessness of their assertions on almost every point. The worn-out theories of schools of theology and criticism which are almost extinct in their birth-place; the "rusty tools" which have done their work in their day, and are now laid aside; these are "refurbished" and paraded as the weapons which are to give Christianity the *coup de grâce*. And the man of "culture," quickened into a languid enthusiasm by what he fondly deems to be something new, forgetting that what is new is not always true, and above all unwilling to expose himself to the exertion of a thorough and earnest examination of the question whether it be true or not, dismisses the matter with a courteous smile, politely waves aside the crowd of anxious apologists who come "between the wind and his nobility," and informs the world that the matter is settled; that Christianity has nothing to say for itself, and that the reign of enlightened intellect has begun.

33. A very remarkable instance of what I have just said is to be found in the volumes to which I have this evening directed the attention of the Institute. I do not wish my words to be applied in their full force to Mr. Arnold,* but he has supplied

* Mr. Arnold himself deprecates the tendency to identify the leaders of thought with their followers. "It is notorious," he says (*Nineteenth Century*, March, 1877), "that great movements are always led by *aliens* to the sort of people who make the mass of the movement."

us with abundant evidence, that even he wrote his *Literature and Dogma* with anything but a full acquaintance with what might be said in favour of Christianity and the Bible; or if he had such an acquaintance, he does not betray it, and still less does he condescend to intimate to those who hang upon his lips that anything has been or can be so said. Stung, however, by the criticism directed against his former volume from the more outspoken and extreme section of the opponents of Christianity, he has obviously, since writing it, devoted considerable time to the study of the evidence for the authenticity of the books of the New Testament.* The result is, that in his later volume he treats the Christian Scriptures in general, and the Gospel of St. John in particular, with a respect which differs in the most marked manner from the flippant and unjustifiable language which in his former volume he has permitted himself to use concerning it. It might possibly happen that if, at some future time, he would give the questions of Miracles and Prophecy, of the fact of the Resurrection and the theory of a Personal God, that close attention which they undoubtedly deserve, he might possibly find that it had been well to have treated "the Bishops of Winchester and Gloucester" to a little less of his satire, and to have dispensed with a little of that freedom of assertion respecting the current theology of the day, which is so marked a characteristic of his book.

34. It is with a view of inviting attention to this want of thoroughness as characteristic of the society of our own time that I have written this paper. That the scepticism of to-day is very different in its tone to the scepticism of the age of Butler and Gibbon, I am perfectly willing to admit; but that it is always as different as some persons suppose I do not believe. That there is such a thing as honest doubt I have always granted, and I have ever regarded the claims of the honest doubter as deserving of the truest sympathy. But we must remember that now, as ever, there is a kind

* In *God and the Bible* Mr. Arnold appears really to have gained a mastery of this branch of his subject, though he can hardly be expected altogether to recant the opinions to which he had so rashly committed himself. He makes a serious blunder, however, when he says, that "even the heretics" received the first Gospel. The early heretics received *none* of the New Testament Scriptures, Marcion only the Epistles of St. Paul and a mutilated gospel of St. Luke, while Basilides and Valentinus display a greater acquaintance with, and a much higher respect for, the Fourth Gospel than any other.

of doubt which is not altogether honest. We must not be misled by a tone of earnestness which, if not exactly assumed, may be the result of self-deception. It is the fashion in this age to display at least a certain appearance of earnestness; but a man may easily persuade himself that he possesses that quality when he has it not. And in a time like our own, which is distracted by the variety of its studies, and overwhelmed by the amount of its evanescent literature, the habit of dealing superficially with all questions, however important, is one that is growing, and is likely to grow among us. It is a bad habit at all times, but it is especially dangerous when it invades the province of religion. That man incurs no light responsibility who without full consideration disturbs the religious convictions of his neighbours. It is no light responsibility, even when we are sure that they are wrong; it is a very heavy one unless we have excellent reasons for being sure that we are right. Before we put before the world that which, if accepted, will shake old beliefs to their foundations, we ought thoroughly to test and examine the grounds for what we say. Random assertions, like thistle-down, if given to the winds, will spread widely abroad, and will produce an abundant crop of weeds instead of a harvest of useful grain. And as a rule the works now published against the Christian religion are a diffusion of "trifles light as air," rather than of weighty and solid investigations into the grounds of Christian belief. They have a rapid circulation, and then they fall down and die; but not without doing their fatal work of destroying conviction in many a heart. Men will imbibe the poison, who will not take the trouble to employ the antidote. Such books are eagerly read, because they have a certain gloss of novelty, and often, it is to be feared, a flippancy to which replies on so solemn a subject could not possibly condescend. They produce conviction, such as it is, because men have neither the time nor the inclination to inquire into the truth of assertions so boldly hazarded. And the Bashi-Bazouks of scepticism,* the men who are glad to get rid of Christianity because it is a check to their evil desires, swell the ranks of its antagonists, and give an additional point to the cry, See how many are the opponents of Christianity—how few are its defenders!

* I am not indebted to Professor Huxley for this expression. It was written before the lecture of his, in which a similar expression occurs, was delivered.

35. Yet we need not despair of Christianity because once again the alarm is raised, as it was in Butler's day, that it is losing its hold upon the English mind. We need not accept the conditions of peace Mr. Arnold holds out to us. For in truth, the prevalence of scepticism that alarms us is only a result of the fact, that men are more real than they were. Men are no longer content to profess their belief in a religion because it has long tradition in its favour; they will only accept it because they believe it to be true. And, therefore, we have no longer the nominal support of those whose mouths proclaimed the truths of Christianity, but whose lives belied them. As I have just intimated, they have gone over to our adversaries. And so we obtain the wish of Ajax.* We shall perish, if perish we must, in the light. We know who our friends are, and who our adversaries. There are but few remaining on our side who are not heart and soul the disciples of Christ; few who are not ready not merely to argue for Him, but to devote their lives to His service. A minority the true believers in Christ may be still, as they always have been, but they have the strength of conviction and cohesion against a multitude of half-hearted and divided adversaries. The differences which separate Christians are as nothing to those which distract their foes. Therefore, we may boldly continue to preach the "traditional" Christianity which is "built upon the foundations of the Apostles and Prophets, Jesus Christ Himself being the chief corner-stone." We may venture on the supposition that Christ's chosen messengers knew, at least, as much about Him and His doctrines as any acute critic of our own day. We may dare, on their authority, to maintain still, without hesitation and without apology, the reality of the miracles on which the world is "losing its hold." We may appeal to the prophecies in which men have ceased to believe, just so far as they have refused fairly to enter into the evidence for them. We may proclaim the Resurrection of Christ, because without it Christianity, the visible saviour of a decaying world, is reduced to a shadow—a name, nay, even an imposture, and nothing less. We may retain our firm faith in a Personal God, because it is the one central truth by which religion must stand or fall. We may continue to uphold the credit

* Homer, *Iliad*, b. xvii., 645-7.

Ζεῦ πάτερ, ἀλλὰ σὺ ῥῦσαι ὃν ἥρως νίης Ἀχαιῶν
Ποίησον δ' αἶθρον, δὲ δ' ὀφθαλμοῖσιν ἰδίσθαι
Ἐν ᾧ φάει καὶ Ὀδυσσεύς, ἑπεὶ οὐ τοι εὖαθεν οὕτως.

of the Scriptures, because they, and they only, give a coherent account of God's dealings with the world from its creation; because they, and they only, contain authentic details of the life of Him Whom God sent to redeem it. We may be sure that "fluid, passing, and literary" remarks on the "ignorance" and "superstition" of the writers of the Scriptures; grotesque perversions of their beliefs, their narratives, and the grounds on which those narratives are received, will not avail to shake the completeness of the greatest conquest that has ever been achieved over humanity. The belief in "God manifest in the flesh" * is now, as ever, the ground of the Christian religion. It is the rock upon which Christ has built His Church, and "the gates of hell shall not prevail against it."

The CHAIRMAN, having conveyed a vote of thanks to Professor Lias for his valuable paper, added, that it was now open to those present to offer any comments upon it.

The HON. SECRETARY then read the following communication from the Rev. J. M'Cann, D.D., of Glasgow:—

"May I be allowed to express my thanks to Professor Lias for having so ably exposed many of the fallacies in the teaching of Mr. Arnold,—teaching which is rendered exceedingly dangerous by the very fluent style in which it is delivered, the wit by which it is embellished, and the extreme facility with which large and apparently solid structures are built on definitions which are altogether untenable. Here, I think, Professor Lias allows him sometimes to escape too easily, for, as accurate definition is the very basis of all sound reasoning, by examining and overturning his most strange definitions the fallacies of the superstructure would at once become apparent. He has also a misleading habit of coupling words as relatives which bear no relation to each other. We find an instance of this in the first paragraph of the paper, where 'unexplored and inexpressible' are substituted for 'unknown and unknowable.' Now, the terms 'unknown' and 'unknowable' are perfectly clear and distinctly related to each other, but 'unexplored' and 'inexpressible' refer to completely different thoughts. The former being nearly synonymous with 'unknown,' but the latter having no connection with 'unknowable,' because that may be very well known which is yet inexpressible; for example, the soul is accurately known in consciousness: few, however, will admit that the term 'soul' is an adequate expression for it. But once let such phrases as these pass, and countless mystic changes can be rung upon them till the reader becomes utterly bewildered, and fancies himself in a solid structure while he is only amid the clouds. Again, what can be said about his definitions of God? See note, para. 9. Is the stream objective or subjective? Does it bear us, or do we bear it? Can we resist the tendency, or is the

* It matters not whether we read $\delta\varsigma$ or $\Theta\epsilon\omicron\varsigma$ in the famous passage I have quoted. If $\delta\varsigma$ be the true reading, it can hardly agree with anything but $\Theta\epsilon\omicron\upsilon$ $\zeta\omega\omicron\nu\tau\omicron\varsigma$ in the preceding verse.

tendency compulsion? And, as regards the 'law of our being,' whence is it? Is it a mere bubble born of the stream, or is it a something apart from the stream, and independent of it? And who can extract any meaning from 'The not ourselves which makes for righteousness'? What is that which is the not ourselves? Is it a force, or person, or what? Such definitions are valueless until these questions have been answered. His definition of Religion is equally faulty; but as the paper treats of that more fully, it may be passed. I would, however, call attention to the proposition as stated in paragraph 10, that 'nothing is to be believed which is not directly verifiable.' And here I would partly agree with Mr. Arnold, but do we mean the same thing by verifiable? I hold that the only means by which we can establish the truth of any proposition is consciousness and the laws of thought, and that whatever is affirmed by these, is by that fact proved true. And surely if there be any one proposition more certainly affirmed by them than another, it is that the mind demands a 'Personal First Cause, the moral and intelligent governor of the world.' The mind cannot rest till it finds an agent, himself unchanged, who is capable of producing all changes, and who must necessarily be intelligent and moral. I perfectly agree with the Professor when he says that the most important feature of the volumes is the denial of the Personality of God, but I must be permitted to differ from him when he quotes Mansel as having at all assisted in the establishing of this Personality (par. 27). It seems to me that Dean Mansel has done more than almost any other English writer to render a belief in the Personality of God impossible. He has so manipulated the terms 'unconditioned,' 'absolute,' and 'infinite,' that he deprives us of all knowledge of God of every kind. He says, 'we must remain content with the belief that we have that knowledge of God which is best adapted to our wants and training. How far that knowledge represents God as He is we know not, and we need not know.' This, however, is not knowledge at all, but ignorance. And if we be wholly ignorant of God, we cannot predicate of Him self-determining intelligence or personality. I cannot help feeling that while we continue to use the terms unconditioned and its species in their literal meaning, we present to ourselves a form of personality so vague as to be incomprehensible and useless; but that if we speak of God's infinity and absoluteness, as simply His knowledge of all that is to be known, His power of being able to do all that is not inherently impossible, and His freedom from all necessary relations, we express all that can actually be meant by the words, and present an unassailable front to antagonistic metaphysics. But may I also be permitted to add that I believe the only practical view of God's personality that can be presented as a sufficing thought to our intellects, as a power to influence the world and reform men's lives, was given to humanity when Christ said, 'He that hath seen Me, hath seen the Father.'

Rev. J. FISHER, D.D., in congratulating Professor Lias, said that a paper containing an examination of so large a number of works must have been no small task. At its commencement the paper referred to a statement made by Mr. Arnold and his friends, that Christianity was "doomed." But this had been said by the enemies of Christianity 1800 years ago, and had been persistently declared ever since, yet Christianity has survived. It was "doomed" in its cradle by the Jewish High Priests: it was "doomed" by heathen philosophers and idolaters generally, so much so, that before the time that Constantine renounced heathenism, a medal was struck with the in-

scription "*Nomen Christi deleta*"; and, indeed, the very name of Christianity did then appear to have been blotted out from the face of the earth: it had been doomed by Continental atheists and by English deists, but it had survived all—Christianity lives because its Head lives. With regard to religion being "conduct"; whatever theologians might have said about "morality, ethics conduct," the Bible did not say that they were religion. The word of God as it had come down to them, was all that they had to contend for. Mr. Arnold's book, he considered, had too much of hypothesis and assertion in it, and his attempt to prove certain passages in the Acts irreconcilable, failed altogether. As to the personality of God, if He was not a Person, what was He? It was difficult to comprehend Him, no doubt; but, as had been said by Richard Sibbes 250 years ago, "If we cannot comprehend Him we can apprehend Him." We could lay hold of Him by a living faith as revealed in the Gospel.

Rev. C. L. ENGSTRÖM would offer a few remarks rather in corroboration of the paper than against it. He supposed that the central thought of Mr. Matthew Arnold's theory was, that certain races of men were gifted with certain characteristic powers, such as the Greeks possessed in matters of art, and the Jews in the matter of spiritual insight; but he drew from that the mistaken inference that we were not to receive the testimony of the latter. He (the speaker) should have thought that the highest in any sphere which expressed man's aspirations were most likely to be correct. In music, for instance, Germany, which was the most forward nation in that respect, had laid down certain canons which were actually true, as the teachings of Science showed. Then, on a kindred question, how, he asked, were they to judge of all such matters of spiritual aspiration? Were we, who were beneath them, to judge them? We know that, when Shakspeare first wrote, his writings were condemned by many persons. The French nation for a long time condemned them, because they did not agree with the canons laid down by Aristotle. We found such authors as Racine holding Shakspeare in small esteem. But now the world had grown wiser, and, having had that colossal intellect before it for centuries, had learnt that the canons, which were in force when Shakspeare wrote, had to be revised when they came into conflict with him. In like manner the Bible was not to be judged by lower canons, but, when the latter conflicted with it, they ought to give way. With regard to the Personality of God the reverend gentleman pointed out that *Christ* had never given His disciples to believe that The Father was a "something outside ourselves which makes towards righteousness." He also laid great stress on the early date of the Epistle to the Hebrews, which would have been meaningless, had it been written after the Romans began the siege of Jerusalem.

Mr. D. HOWARD asked the meeting to bear in mind one point, namely, that the differences which distracted the foes of Christianity were infinitely greater than those which existed amongst Christians. He considered that

the paper which had just been read gave a much clearer conception of what Mr. Matthew Arnold might be supposed to mean than could be obtained from reading his most fluid book. The scientific argument against Christianity was, that it was not sufficiently defined; but what did the literary argument give them? Could anything be more utterly unscientific and impossible to define than Mr. Matthew Arnold's own definitions? What was the meaning of the "not ourselves who make for righteousness"? He had often puzzled his mind to find out whether the verb was in the active, middle, or passive voice. Altogether, the controversy between the defenders of the Scriptures and those who belonged to Mr. Arnold's school of argument was simply the old story of the trident and the net: the latter was the more awkward thing to fight because they never could hit it.

Mr. L. T. DIBDIN said that the paper which had been read found fault with Mr. Arnold's definition of religion, namely, "morality touched by emotion," on account of its obscurity. Might not he have meant religion as applied to an individual? Mr. Arnold probably would not say that morality itself was a shifting thing. Probably his opinion was that it had nothing to do with emotion, which was something in us which led us to take hold of righteousness, and which gave the latter an influence over us. As Professor LIAS said, emotion was "essentially fitful, irregular, transient, varying with our physical health and external circumstances," and for that reason, in Mr. Arnold's opinion, religion had a different hold upon different persons, and a different hold upon the same person at different times. Morality was fixed, but the power it had over us depended upon the emotion of each person.

The CHAIRMAN was glad Professor LIAS had called attention to the fact which was lost sight of by a great many people, that there was a negative dogmatism just as much as a positive dogmatism. It was as dogmatic to say "There is no God," as to say "There is a God"; and it was as much so to say that God was "the not-ourselves which makes for righteousness," as to say that He is a Personal Being infinitely just and powerful. The fact was that where we had belief and science we must have dogma. The reason people were afraid of the word was that "to dogmatize" was used to signify "forcing unproved opinions on others." The Chairman, then referring to the difference between the mode in which Christianity was attacked in the present day, and that in which it used to be assailed during the last century, said: years ago the method was coarse—God was slandered—whilst in the present day the method was refined. He remembered a story told with reference to Voltaire. The Mayor of Brest was invited to meet M. de Voltaire, and the civic dignitary, when he heard to whom he was about to be introduced, expressed himself thus: "He is the Voltaire who has permitted himself to employ disrespectful words about God; well, I would recommend him not to use such expressions about the magistrates of Brest!"

Professor LIAS said that in writing his paper he had found it necessary to steer between rocks and quicksands,—he had to avoid matters upon

which Christians themselves differed, so that they might have a pleasant and not an acrimonious discussion. He remembered an anecdote of a well-known professor at Cambridge, who expressed his wish that German metaphysics and German theology were all at the bottom of the German Ocean. He (Professor Lias) did not altogether join in that wish, because he thought that we were considerably indebted to German theology ; but if there was anything he wished at the bottom of the German Ocean it was the bitterness of their religious differences. As to what had fallen from Mr. Dibdin, to his mind the proper definition of religion was that it was a "restraining power." He would not undertake to explain Mr. Matthew Arnold's "morality touched with emotion." He found it extremely difficult to understand what was meant. How could morality be touched by emotion ? He should have imagined that it was we who were touched by emotion, and not morality, and that morality was independent in itself from emotions, and was a principle which, under all circumstances of our physical state, would still bind us down to do the one thing which was right. He thought Matthew Arnold's definition was very unsuitable, but, if he were asked to explain, he could only say that he gave up the task in despair.

The meeting was then adjourned.

ORDINARY MEETING, JUNE 18, 1877.

(Specially held at the House of the Society of Arts.)

REV. ROBINSON THORNTON, D.D., VICE-PRESIDENT, IN THE
CHAIR.

The Minutes of the last Ordinary Meeting, and of the Annual Meeting, were read and confirmed, and the following elections were announced :—

MEMBERS :—Rev. H. G. Batterson, D.D., Philadelphia ; Rev. A. Hovey, LL.D., S.T.D., President Newton Theological Institute, Massachusetts, U.S.A. ; Rev. F. F. Goe, M.A. (Oxon.), London ; D. C. Fox, Esq., Somersetshire ; J. Enmore Jones, Esq., Enmore Park ; R. C. Morgan, Esq., London ; W. L. Watson, Esq., London ; T. B. Woodward, Esq., Malvern.

ASSOCIATES (Life) :—L. T. Wigram, Esq., London ; Rev. Prebendary Bullock, M.A., London.

ASSOCIATES :—Sir J. Fyrrer, M.D., K.C.S.I., F.R.S., London ; T. Johnson, Esq., Macclesfield ; Lieut. W. L. Greenstreet, R.E., Darjeeling, Bengal ; W. G. Craig, Esq., Ireland ; W. S. Watson, Esq., F.R.C.S., London ; Colonel Blair Reid, Bengal Staff Corps ; Rev. J. L. Challis, M.A., Cambridgeshire ; Rev. G. W. Petherick, B.A. (Dub.), Salford ; Rev. H. M. Hart, M.A., Blackheath ; Rev. G. Crewdson, M.A., Kendal ; Rev. L. F. Phillips, B.A., Darjeeling ; Rev. F. W. Macdonald, B.A., London ; Rev. A. Canney, London ; Rev. S. D. Thomas, Wrexham ; Rev. J. D. Tetley, London.

Also the presentation of the following Works to the Library :—

"Proceedings of Royal Society," 179, 180.	<i>From the Society.</i>
"Proceedings of American Philosophical Society," 96, 98.	<i>Ditto.</i>
"Proceedings of Canadian Institute," 95.	<i>From the Institute.</i>
"Materialistic Physiology." Dr. J. M. Winn.	<i>The Author.</i>
"Scripture and Science." Rev. W. C. Badger.	<i>Ditto.</i>
"Charing Cross Magazine." T. Greenwell, Esq.	<i>The Editor.</i>
"Is the Book Wrong ?" Rev. R. H. Smith.	<i>The Author.</i>
Various Papers by S. M. Drach and the Rev. G. W. Petherick. <i>The Authors.</i>	

The Rev. Isaac Taylor, M.A., then gave a lecture upon *The History of the Alphabet*. [As Mr. Taylor is bringing out a work of some size giving his views upon the subject, only the following *précis* of his argument is inserted here.]

THE HISTORY OF THE ALPHABET.

By the Rev. ISAAC TAYLOR, M.A.

(*Précis by the Author.*)

THE history of the alphabet has been only known within the last few years. De Rouge's great discovery of the derivation of the Semitic letters from the Egyptian hieroglyphics has proved that the alphabet is the oldest existing monument of human civilization,—older than the Pyramids.

There were three stages in its invention :—

1. Ideograms,—pictures of things.
2. Phonograms,—symbols of words and syllables.
3. The letters of the alphabet.

The lecturer gave various illustrations of ideograms and phonograms from the Chinese and Egyptian writing, and explained the nature of the Egyptian system of phonetics and determinatives. After giving a brief account of the syllabic writing which was developed in Japan out of the Chinese, and in Cyprus out of the Cuneiform, he went on to explain De Rouge's discovery of the mode in which the Semites had selected 22 letters out of the 400 Egyptian hieroglyphics, and thus formed that first alphabet, which had been the parent of all the alphabets of the world. By the aid of diagrams the lecturer traced the history of each letter of the English alphabet. He began by showing how the letter A was originally the picture of an eagle, B of a crane, M of an owl, L of a lion, and so on with the rest. He then exhibited the transition from the Hieroglyphic forms to the Hieratic forms found in the "Papyrus Prisse," the oldest book in the world, older than Abraham. He next explained how the alphabet on the Moabite stone, and that on the tomb of Eshmunazar, king of Sidon, were derived from the Hieratic writing of the "Papyrus Prisse." The lecturer then passed on to the development, from the Phœnician letters, of the early Greek, Etruscan, and Latin alphabets, beginning with the letters scrawled on the leg of the Colossus at Abousimbul, in Nubia,

by Greek mercenaries in the service of Psammetichus, B.C. 617. He then showed how our modern written and printed alphabets had arisen out of the Roman letters, and, after a brief account of the Sanskrit and the Runic alphabets, and of the routes by which they might respectively have reached India and Scandinavia, he stated that all the alphabets of the world might thus be traced, by means of the Moabite stone, to their ultimate source in the Egyptian hieroglyphics.

He spoke in the next place of the powerful influence which had been exerted on the spread of alphabets by the three great missionary religions,—Buddhism, Christianity, and Mohammedanism; showing how Buddhism had spread the Asoka alphabet over India, Ceylon, Tibet, and Java; and how the Nestorian schism had carried one form of the Syriac alphabet over the plains of Central Asia to the wall of China, while the rise of Islam had caused another local Syriac alphabet, that of Cufa, to be the parent of the Arabic, Turkish, Persian, and Hindustani forms of writing.

He went on to explain the causes of alphabetic change:—

1. Those due to the nature of writing materials,—clay, stone, papyrus, parchment, palm-leaves.
2. Indolence in the writer.
3. Need of legibility.

He showed in detail how certain letters had been modified in form by the influence of these causes, and gave some curious illustrations from the forms of the modern Arabic letters. He then pointed out the reasons which had caused the order of the letters to be changed in different alphabets, and concluded by stating that in the so-called Arabic numerals, 1, 2, 3, 4, &c., we have still in daily use, in a most archaic form, the first ten letters of the primitive Semitic alphabet. In illustration of this statement he showed in detail how the figures 2, 5, 7, and 8 are nothing but modifications of the letters B, E, Z, and H.

The CHAIRMAN.—I am sure all will unite in thanking Mr. Isaac Taylor for his address; he has been compelled to compress into an hour and a half matter which would afford ample material for a book. I do not think I shall be singular if I say that I have listened with much admiration to the way in which Mr. Taylor has given us in that short space of time what might fill a volume of considerable size.

A MEMBER.—We know that many of our missionaries have introduced alphabets to different nations, and I believe that a missionary in North America has introduced a syllabic system of great simplicity, for the purpose of teaching reading and writing to new tribes to whom the Gospel is to be preached.

Mr. TAYLOR.—As a simple test of the usefulness of a syllabic system, I may point out that the Japanese are now proposing to replace their own syllabic writing by the English alphabet. As you multiply your forms and symbols it becomes more and more difficult to distinguish between them. If you have fifty or sixty syllables to be represented by separate symbols, the symbols will be either so much alike as to be difficult to distinguish, or so complicated as to be tedious to write, and difficult to remember.

Sir GEORGE CAMPBELL, M.P.—I have been much interested in the address which Mr. Taylor has given us, but with regard to the Arabic I do not think he has brought out very clearly, to those who are not acquainted with it, the direct connection of that with the original Phœnician. He describes Arabic as a succession of strokes and dots, the dots being necessary in order to distinguish the strokes from each other. Now, I have had some practice in it, and I know that, as a written character, it has some great advantages over our own, and is written with greater facility and quickness. Perhaps Mr. Taylor will be good enough to give us some further explanation of the connection between the Arabic alphabet and the original Phœnician alphabet. Then I fear Mr. Taylor has done but scant justice to the Sanskrit alphabet—that admirable and excellent and expressive alphabet, one of the best in the world—in treating it as a mere sub-branch of one of the great families of alphabets. I think that in its development, not only of the simple consonants, but of the aspirated and double consonants and vowels, we may find much that is both interesting and excellent. My impression is that the Sanskrit alphabet may be more easily traced to the Phœnician, but with regard to the Arabic I do not see the connection.

Mr. TAYLOR.—I only mentioned the Arabic as an example of facility in writing, and it is obvious that what is easy to write is often difficult to read. As to the Sanskrit alphabet, I had no time to dwell on its merits, but merely alluded to its derivation from the Semitic alphabet. The exact stages of the affiliation are still disputed amongst scholars. As to its perfection, no doubt it is beautifully perfect in theory, but its typographical signs are numbered up to 328, and I should like to know whether a newspaper, such as the *Times*, could possibly be printed under such a system. The difficulty of distinguishing between the numerous types is so great that Sanskrit scholars correct their proofs by means of reference numbers referring to the types, instead of actually writing the letter in the margin of their proof-sheets.

Sir GEORGE CAMPBELL.—My experience is that Arabic is not at all difficult to learn or to write, nor is it difficult to read. But the great question which I wished to raise was whether there is proof that the Arabic is a derived alphabet, and does not come from an independent source?

Mr. TAYLOR.—I think there is no doubt at all of that. It clearly comes from the Aramaic, through the Palmyrene, which is an alphabet written at Palmyra in the time of Zenobia. We have many inscriptions in that alphabet, and it can be affiliated through the Hauran alphabet to the alphabet

written at Cufa, which again was the parent of the Naakhi or modern Arabic. I do not think there is any doubt about that ; in fact, I believe it is undisputed.

The CHAIRMAN.—As the subject of a missionary alphabet has been mentioned, I may point out that we have an instance of one dating from ten centuries back. Two Greek monks, Cyril and Methodius, endeavoured to adapt the Greek characters to the Slavonic language. Their alphabet contains forty-eight letters, and is very complicated and artificial. Peter the Great reduced the number of letters to thirty-five, and that missionary alphabet, so adapted, is now used to represent the complicated sounds of the Russian language. Any one who has attempted to master Russian will admit that the alphabet is not easy to acquire, partly owing to the numerous different sounds which have to be dealt with, and partly owing to the character of the Cyrillic alphabet. Whatever we may say of the Slavs, one thing is to be wished, namely, that they had framed a better alphabet.

Rev. H. A. HALL.—There is a link in the history of our language which is undeveloped—I mean that which conveys it to a particular neighbourhood. On the Baltic Sea there is a class of persons, by some called misguided, by others heretical, who say they are descended from the lost ten tribes. I should like to know whether there is anything possible in that notion, or whether it is absurd ?

Mr. TAYLOR.—Any notion may be considered possible, if there is any evidence in its favour, but where we have no evidence at all, the best thing is to say nothing about our notions. But I fully admit that if you compare the Runic letters with the Semitic, you will find a remarkable resemblance in almost every case ; so that it is a thousand to one in favour of the Scandinavian letters not being independently invented, but borrowed.

Mr. HALL.—Mr. Taylor has pointed out the trade route from the Black Sea to the Baltic over which the Runic alphabet may have travelled. Is it not the case that in the Crimea are found Hebrew cemeteries, with Hebrew inscriptions ; and if there is that route, is it not possible that those who died and were buried in the Crimea may have been part of those who carried the alphabet to the people of Northern Europe ?

Mr. TAYLOR.—That is, I think, hardly possible. The inscriptions in the Crimea are of the Babylonian type of square Hebrew, and are comparatively modern, whereas the earliest Runic inscriptions are somewhat older in date, and wholly different in character. If you go into the matter, I think you will arrive at the result that the Northmen were in possession of their Runes before the Karaite Jews settled in the Crimea.

The meeting was then adjourned.

ORDINARY MEETING, FEB. 4, 1878.

C. BROOKE, Esq., M.D., F.R.S., V.P., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following elections were announced :—

HONORARY FOREIGN CORRESPONDING MEMBER :—H. M. Stanley, Esq.

MEMBERS :—The Right Rev. Bishop Staley, D.D., Lichfield ; Rev. Professor Dabney, D.D., United States ; Rev. R. W. Kennion, M.A., Norwich ; W. H. Porter, Esq., Letterkenny.

Also the presentation of the following Works for the Library :—

“Proceedings of the Royal Geographical Society,” 1st yearly Part.

From the Society.

“Proceedings of the Royal United Service Institution,” Part 93.

From the Institution.

“Comparative Psychology.” By Professor Bascom.

The Author.

“The Charing Cross Magazine.”

From T. W. Greenwell, Esq.

The CHAIRMAN.—We are all well aware that in the present day, unfortunately, scientific thought is, by some scientists, made to interfere with what properly belongs to the scope of religious belief. I have therefore much pleasure, on the present occasion, in inviting your attention to the paper now to be read, in which we shall find that the important principles we proclaim are placed in a highly satisfactory light. I have now to call upon Bishop Cotterill to read his paper. (Cheers.)

The following Paper was then read by the Author :—

**ON THE TRUE RELATIONS OF SCIENTIFIC THOUGHT
AND RELIGIOUS BELIEF.** By the Right Reverend
the BISHOP OF EDINBURGH.

IT is probable that by this time most persons are tired of hearing that “the problem of the age is the reconciliation of science and religion.” Such language is certainly exaggerated, and implies, I think, some misconception of the question at issue. Many of us, doubtless, are of opinion that if only scientific men and theologians would be content to work in their several spheres, with sincere, patient, and reverent love for truth, religion and science would in due course reconcile themselves, without any interference of ours ; and we ourselves may not only find no obstacle to our religious belief in any of the legitimate results of scientific research, but even in regard to speculations which may seem to us to transgress the true limits of scientific thought, we may cheer-

fully rest in the conviction that "Truth is the daughter of Time," and that we must not expect at once to discover the harmony of all things in heaven and earth.

2. The very existence, however, of this Institute is itself a proof that we are conscious that there is nevertheless an important work to be done, in some degree peculiar to the present age, in investigating the true relations between these two departments of human thought. Those of us, indeed, who know from sad experience how deeply infidelity and even atheism have penetrated into the lower strata of our English life, and how they are fostered by the specious arguments against all religious belief which some of the theories of modern science suggest, cannot but feel how necessary in these days, and how highly to be valued, are the labours of those who devote themselves to the special work of exposing these sophistries. And we cannot but ask with some anxiety, what progress has been made in this direction, and whether anything has been effected towards the solution of the problem (to use the popular language) of the reconciliation of science and religion.

3. It seems impossible to doubt that there has been of late among the more intellectual classes some reaction from the general disbelief which at one time was the fashion, and which still represents itself in some of our leading periodicals as the most advanced thought of the age. It has been found that the leaders in that department of science which is physical science in its true and proper sense are, in this age, as they have been in former ages, believers in Revelation; whilst the objections to Christianity have proceeded almost exclusively from men who, however eminent for certain scientific attainments, are students only of the phenomenal laws, and not of the dynamics of nature. Indeed, dynamical science has turned the tables on the objectors, proving from its own standing-point, if not all that it attempts to prove, at all events that the problems of the universe present greater difficulties to the unbeliever than to the Christian. And on all sides there seems to be growing up a somewhat altered feeling. On the one side, it is discovered that Christianity has much more to say for herself on purely scientific grounds than was anticipated. On the Christian side, there is more confidence that all real science ought to be welcomed as an ally, and not feared as an enemy; and there is, on this side at least, much less of that dogmatical and overbearing language as to the questions at issue, which too often in controversy displays the consciousness of want of argument.

4. We have, therefore, good reason to believe, it would seem, that some progress has been made in the right direction. Yet, if we are to have a lasting peace—I do not, of course,

mean between Christianity and unbelief: between these there can be no peace while the world lasts, but between science itself and religion, as there certainly ought to be,—it must be established, as it appears to me, on a somewhat broader basis than has been as yet assumed. Attempts to reconcile them at particular points only are always of doubtful advantage. We may seem to have gained much when we prove, for example, that the history of creation in Holy Scripture harmonizes with the conclusions of geology or of dynamical science; or when it is maintained by scientific men that the physical universe is constructed of atoms which have the character of “manufactured articles”; or when a new discovery throws doubt on some theory that seems to us to exclude the Creator from His own world. But there is no small risk in this mode of dealing with the question, of doing some injury alike to science and religion, and especially of producing a feeble hybrid, which is neither genuine science nor true religion. And this method of seeking a reconciliation between the two seems to assume that the conclusions of science have a certainty such as the principles of Christianity do not possess, which is exactly the opposite of the truth. For not only is it manifest that many of the particular hypotheses of science are more or less guesses in the dark, which more knowledge may largely modify, but also generally scepticism, which is fatal to religion, is the very life of science. And if some of those scientific conclusions, which seem to confirm religion and to effect the reconciliation desired, are found in the progress of human knowledge to be not altogether trustworthy, religion itself may receive no small detriment. At all events, our faith is in danger of becoming a poor faint-hearted thing, always suspicious of science, and afraid lest some new discovery should knock away the uncertain supports on which it had too much relied in its conflict with infidelity.

5. Indeed, very little reflection might convince us that in order to avoid these dangers we need a general solution, and not any number of particular solutions of the problem. However, it is clearly not sufficient to say generally that science and religion have different spheres, that each is paramount in its own, and that the one need not interfere with the other. This the unbeliever readily admits, and complacently bids religion confine itself to the *sentiments*, and elevate them, leaving to science the sphere of logical reasoning, for which he claims absolute authority over the mind. But sentiment, we well know, means anything or nothing, except it be rational and have a basis of reality; and certainly Christianity claims to be, in the highest conceivable sense, reasonable, the very manifestation in human life of Divine Reason.

6. It is evident, then, that this question of the several spheres of religion and science needs to be very carefully investigated, and my purpose this evening is to offer a few suggestions towards the solution of this great problem. My deep conviction is that the rapid progress of physical science in modern times has given rise to popular notions as to the authority of scientific thought, and its right to control and dictate to the intellect, which are both altogether groundless and very misleading. And I am now referring not merely to some doubtful theories, but even to those conclusions which we all accept without questioning. In order, however, to discuss this, it will be necessary first of all to examine—and this I will do as concisely as is possible without being obscure—the several distinct modes of regarding the universe, that is, the several spheres of thought of which the human mind is capable, and of which the scientific method is but one. Fichte, who, at times, even while subverting the very basis of all religious belief, yet indicates with singular clearness the lines on which Christian thought should proceed, has, in a work known in this country by an English translation, *The Way towards the Blessed Life*, marked out a fivefold division of this subject, which, with such modifications as are required to make it Christian instead of Pantheistic, and are, indeed, necessary to its exactness and completeness, seems to me a perfectly exhaustive analysis; and without accepting his conclusions, or even following his arguments, I shall avail myself of the general outline of his analysis, as directing us to accurate distinctions of the several spheres of human thought which become, I think, almost self-evident when they are once defined.

7. (I.) For instance, it will not be questioned that the first and lowest mode of regarding the universe, the view of the outer world to which we are all naturally more or less enslaved, is that of *sense*; that in which those things which men apprehend by their sight, their hearing, their feeling, and their other bodily senses, seem to them the only realities. The man who cannot rise above this sphere of thought is in the lowest sense, *ἄνθρωπος ψυχικός*, a natural man, and is, without all doubt, living a life unworthy of the high powers and the great ends of humanity. Or, as Wordsworth says,—

“ Whose mind is but the mind of his own eyes,
He is a slave, the meanest we can meet.”

And you will remember when the poet would describe a man destitute of all generous feelings and honourable motives, his incapacity of regarding any other aspect of nature beyond that which the senses recognize is the index of his character :

“ A primrose by the river's brim
A yellow primrose was to him,
And it was nothing more.”

8. But, although such a view of the world around us differs little, probably not at all except in degree, from that of animals, yet we cannot, without undermining the foundations both of all knowledge and of all morality, treat this sense-view as in itself unreal, or consider the forms and phenomena of the universe to be illusions. These phenomena, indeed, when tested by reason, are found to be the effects of causes oftentimes totally different from the interpretation put on them by the senses; the colour of an object, for example, as it appears to the eye, and the particular vibrations of the ether which produce the sensation of that colour, are so different in kind that the mind can trace no connection or analogy between them. Yet the one is as truly a reality as the other, and as certainly the work of the Creator. It is the mere pedantry of science to condemn as untrue popular language, the language of the senses; as if those things which science regards as realities were anything else than effects of yet higher causes, such as doubtless would be found, could we comprehend them, to differ as widely from the conceptions of science as these do from our immediate perception of the phenomena.

9. (II.) Again, it requires but little consideration to discover that the second, or next in order from the lowest mode of viewing all created existence, is that to which our logical faculty, and reason (in a limited sense of the word) directs us; in which the universe is regarded as the outcome of *law*, and of orderly sequences of cause and effect. This view, in reference to the material universe, is that of physical science, the office of which is to investigate the laws according to which the sequences of natural phenomena are governed. Such, though by no means so accurately defined, or so logically determined, as it has become in modern times, was the idea which in the ancient Greek philosophy was involved in the word *φύσις*, the notion in this, as in the Latin *natura*, being that of a generative and productive power expressing itself, according to some primordial law, in the forms and phenomena of the Universe. In conformity with this idea, modern science, as its horizon extends, aims not only at discovering the immediate antecedent of each phenomenon, but also at proving these various antecedents to be results of some common cause, and thus representing the various energies of nature as only different forms of the same universal energy, and the apparently diverse or even conflicting laws, as all dependent on one common law.

10. But this view of Nature,* as was recognized even in the Greek philosophy, includes not the material universe only, but the whole nature of man, and, therefore, his civil and political relations—those which belong to him as a member of the human family; and it is thus the foundation of social and moral science. In regard to these, however, its sphere is very limited, as it cannot transcend the realm of law, or deal with questions, the governing principle in which is spirit, and not Nature only—that spirit which is life, and not mere law, which is self-determining, and not the mechanical effect of antecedent causes. Science, however, as the logical investigation of law, and of the sequences of causes and effects, has to do, not only with those relations between men which are determined by the laws of the State, but also with that lower, yet most true, doctrine of morals which forbids injustice between man and man, and dictates obedience to that which duty requires, whether commanded by any external law or not. Nor is this science, as might be imagined, of a different order from physical science; for the law and order of the material universe are but the counterpart of those which must govern the social state of man, if it would fulfil its proper ends; as has been beautifully said, in the spirit of the truest philosophy, of those molecules of which, according to the theory which the writer has expounded, all the systems of the material universe are constructed,

“From the ineffaceable characters impressed on them, we may learn that those aspirations after accuracy in measurement, truth in statement, and justice in action, which we reckon among our noblest attributes as men, are ours because they are essential constituents in the character of Him Who in the beginning created, not only the heaven and the earth, but the materials of which heaven and earth consist.” (*Clerk Maxwell on Molecules.*)

11. (III.) And yet, however superior to the life of sense, and worthy of a rational being, the scientific mode of regarding the universe may be—and to many it appears the sum total of all conceivable wisdom,—it is nevertheless certain that most cultivated intellects, and many, indeed, that are uncultivated, find this view wholly insufficient of itself to satisfy them, and that there is a higher and nobler region of thought, as far removed from that of mere law as this is from the domain of the senses. The grandeur and the beauty of the universe appeal to a faculty in man, far superior to that logical faculty which amounts only to the recognition of identities; while the spirit of man has a *poetic* or creative power, and derives from the universe ideas which the dialectic reason

* *Maine's Ancient Law*, p. 54.

could never have discovered there. Certain notions of beauty indeed there are which proceed merely from pleasurable effects on the senses, or from associations with such effects; but these belong to the first, or lowest, view of the universe, and even animals seem to possess some such feelings. But the true human consciousness of beauty is of a different order from this, and exists even in the absence of actual sensation. It depends, however, in no degree on the knowledge of the causes by which phenomena are produced, and is in no way connected, it would seem, with the logical faculty; indeed, the scientific mode of regarding the universe, except as it enlarges our view of Nature, seems to be a hindrance rather than helpful to the exercise of the higher and creative faculty. "The glory of Nature," to use the eloquent words of the late Canon Mozley, "in reality resides in the mind of man; there is an inward intervening light through which the material objects pass, a transforming medium which converts the physical assemblage into a picture." This mode of regarding all created being, which as looking through Nature to invisible ideals, and being a witness that we belong to a higher universe than this which is seen, we may call the *spiritual* mode, is not only the source of all real art, as distinguished from the mere imitation of nature, but, in another form, is essential to that higher moral life which consists not in mere obedience to law, even the law of conscience, but in the love of that which is good and excellent, τὸ καλοκαγαθόν, for its own sake. To this sphere of thought and sentiment belongs indeed all that is noble and elevating in man, and in the history of the world. The ideas which are of this order, soaring above the region, not only of the sensible perceptions, but also of mere law and scientific conclusions, refuse to be measured by the same standard as these, and often, in regard to the physical world, appear to the scientist, and, in reference to morals, to the legalist, as extravagant and unreal, as the conclusions of science seem to him who knows nothing but that which his senses teach. Yet this would be a dreary world if law were the only reality and the one master in the universe.

12. (IV.) But every one of these several aspects of the universe has pointed onwards to one higher still, which though distinct from all, and transcending all, yet embraces all; for how is it that these existences are what they are, to us and to each other? The answer, by law, does not in the least solve the difficulty; science merely asserts and expounds the orderly sequence of the phenomena, but gives no further explanation. The mystery of the relation of our perceptions to the external world it leaves a mystery. The original cause

of the various energies, the mutual connection of which it is ever attempting to determine, it does not profess to know; in fact it loudly proclaims it unknowable. It is evidently quite out of its province to account for the fact that these physical laws produce in nature objects of beauty, and that our minds have the aspirations and sublime ideas which Nature suggests by its various forms, yet does not itself contain. There is only one possible answer to the question. As certainly as it is blindness in him whose view is limited by the perceptions of the senses not to recognize the order that underlies the things that are seen, and in the scientific mind to be incapable of realizing the beautiful and good and noble, and of loving it for its own sake, so, and much more, is he blinded who does not regard all these things as proceeding from God, and subsisting in God. The fact that to some minds the *religious* view of the universe seems unmeaning, and perhaps absurd, is no argument whatever against its truth, any more than that many are incapable of scientific conceptions, and that to others poetic ideas are unintelligible, can be admitted as a proof of the unreality of these modes of thought. The universal conscience of man has led him in all ages and in all nations, with no exceptions but such as prove the rule, to regard God as the omnipotent, all-pervading, omnipresent Will, "of Whom are all things, and we by Him; in Whom we live and move and have our being." To the religious mode of regarding the universe it is quite unnecessary to define whether we should say that the events happen by God's permission, or by God's overruling providence, or by God's appointment, or God's predestination; it is simply that to exclude God, the sum and source of all goodness and all reality, from anything whatsoever in the universe, is to the religious mind not only intolerable, and more horrible than death itself, but an absolute self-contradiction and absurdity.

13. (V.) It might be supposed that when man has attained to the religious view of the universe, this must be the highest possible region of human thought; and, indeed, that the mind is incapable of reaching further, except with the aid of a Divine revelation, seems self-evident. But it was a true instinct that suggested to Fichte that, in order to exhaust every mode of thought, a yet higher sphere is required; and though he calls it the view of science or philosophy, yet his language evidently means, that as the religious view regards all things as of God, and God in all things, that which the mind still demands for its satisfaction, is a knowledge of the manner of the relation of God to all existences, and of all these to God. But here all speculation must, in the nature of things,

fail ; for this is the knowledge of the unknowable, it is looking into the impenetrable darkness of Infinite Light. And yet without such knowledge religion is a mere sentiment or instinct of faith, rather than a reasonable belief ; and however firm and immovable the conviction may be, producing implicit confidence in One of whom all that is known is that He is God, yet such conviction is unprolific, and cannot generate those concrete religious ideas which alone become living principles and powerful motives in the soul. Indeed, in all ages, the human mind has shown itself incapable of resting in an abstract or indefinite religion, but has felt after God if haply it might find some form in the darkness, and has struggled to rise from nature to some more defined knowledge of God. But the effort has been fruitless, and the result has only been superstition and idolatry. This want of the human mind Christianity alone claims to have supplied, by its revelation of God made man, and of the mystery of the relation of God to the universe in Christ. It claims to have solved the problems which the preceding modes of thought suggest, but do not explain. And it must be observed that this, which for distinctness we may call the *theosophic* view, and which the Christian revelation opens to us, instead of carrying us further away from the universe as it is, on the contrary in that which is its central idea, the incarnation of the Word or Son of God, is connected with every other sphere of human thought, and gives a new reality to all. It is, for example, impossible to regard the *sense* view of the world and human life as an unreality if we believe in the Incarnation. The very foundation of the Revelation, as a manifestation of God in human nature, lies in the region of the senses (1 John i. 1, 2). Again law, in which, we have seen, moral law must be included as its highest form, has new light thrown on it by the history of this relation of God to man, whilst the morality which is superior to law finds here its noblest and its perfect type. The mode, therefore, of regarding the universe which Christianity alone enables us to take does really complete the cycle of human thought, and leaves no space for any other mode, nor any possibility of some superior region of thought being attainable. And comprehending, as it does, the whole range of human thought from the highest to the lowest, it appeals to all, and must needs be in harmony with all, and the reality in this sphere cannot be contradictory to the reality in any other. But it must not be forgotten that each mode of thought has its own proper faculty which it addresses, and Christianity expressly demands a spiritual faculty in man, without which its truths are unintelligible. "The natural man," St. Paul says, "receiveth not the things of the Spirit of God, for they are foolishness unto

him; neither can he know them, because they are spiritually discerned." There is nothing strange in this; the very same might be said, *mutatis mutandis*, of the inability of the merely scientific mind to discern the true beauty of the universe. The only difference is that in the case of the spiritual faculty required to distinguish revealed truth, the incapacity arises from an unwillingness to receive a divine gift, and to come into the light. And further it must be observed, that although this applies only to the reception of the abstract truth, yet this has from the nature of the case but one concrete form. If, for example, the Incarnation and the Atonement are recognized by the spiritual mind as realities,—we may say, indeed, as necessary truths,—the reality can only be found in the history of Him, Who was born at Bethlehem, Who died on Calvary, and rose again on the third day from the grave. Those only who do not apprehend or appreciate the spiritual truths question the supernatural history.

14. It is unnecessary for our present purpose to discuss further the distinctions which have been indicated, but we may observe generally that, although each higher sphere of thought contains nothing contradictory to those which precede it in order, yet the ideas of the lower do not of themselves direct us to the higher, but they may in some cases even seem to be opposed to it. Even so the Jews thought that the righteousness of faith contradicted the law, and believed they did God service by persecuting the Church. Some new power is required in order to pass from one phase or sphere of thought to that which is higher. The attempt, for example, to rise by the means of scientific ideas, without any other powers, to those of religious belief and knowledge, is even more futile than it would be to endeavour to become an artist by the study of Euclid, or a poet by the aid of the differential calculus.

15. But having so far cleared the ground by determining what must be the special spheres of scientific thought and religious belief, the latter of which includes both belief in God as the Sovereign and Almighty Will, and belief in those relations of God to the universe which are revealed in Jesus Christ, we may now turn to the question of the relation of these two, and, specially—for this is all I propose to examine—of the claim on the part of physical science to limit and control religious belief. We do not find any claim asserted of its authority over art or poetry. It would be absurd to consider science as capable of interfering with, or limiting, the æsthetic view of the universe. Why, then, is it to be supposed that religion should be subject to its authority? There seem to be only two reasons for allowing such a claim that can be given

or imagined. On the one hand it is assumed, and has been too hastily conceded, that as the conclusions of science are drawn by the aid of reason, therefore science is the exponent of reason, and its conclusions are necessary truths, to which the mind cannot do otherwise than assent without self-contradiction; and the supernatural appears to be at variance with these conclusions. On the other hand, it is argued that the result of scientific thought being to establish the universality and continuity of law, there is no room left for will. And if this were true, it must entirely exclude God, and therefore, all religion, from the universe.

16. I will briefly examine both these notions, and if it shall appear that there is no foundation for either, we may be content to leave to science its legitimate position as one of the true modes of human thought; neither the highest nor the lowest; extending, indeed, into regions quite inaccessible by him who is enslaved to the ideas which the senses suggest, yet occupying a very small part of the whole realm into which the mental vision of reasonable man can penetrate.

17. (I.) First, then, in order to ascertain whether, or to what extent, the conclusions of physical science ought to be invested with the authority of necessary truths, let us consider through what process the mind arrives at such conclusions. They are derived, we know, as deductions from certain primary assumptions as to material things, which the perceptions of our bodily senses suggest. The process of logical reasoning by which the deductions are drawn, in all except the simplest and most obvious cases, is the science of mathematics; including both the science of abstract quantity and that of relations of abstract space, by means of which, combined, those conditions of quantity and space are determined, which define the various phenomena of nature. In these sciences, the fundamental principles are not merely probable assumptions, or laws which require to be verified by the senses, they are propositions self-evident to reason, logical identities, which cannot be denied without a contradiction in terms. A world in which two and two made five (as has been supposed possible) must be a world in which the term "two and two" would not mean what we mean by it. And the result of mathematical investigation, however complicated, and though conducted by symbols by which the logical reasoning is so condensed as to be often obscured, if not entirely concealed, is yet nothing else than the comparison of different forms of identities which the reason thus determines to be equivalent. Thus far we are in the sphere of pure reason, and deal only with its relations; and, except on the supposition of some error in the operations, anything contradictory to these conclusions is an absurdity.

18. But when we proceed to apply these logical processes to physical relations, we tread on different ground altogether. Our senses train us to form certain conceptions as to material substance, and its motion or other relations to space and time. We conceive of matter as something occupying space, so that no portion of space, the whole of which is filled by one portion of matter, can at the same time contain any other. We further conceive of it as inert, that is, absolutely incapable of altering its own conditions. These two conceptions direct us to certain fundamental laws of the motion of material bodies; the laws being, as far as we can judge, necessary consequences of our primary conceptions. At the same time, it must be remembered that the confidence which the mind now feels in these laws of motion was very slowly attained, and has arisen from the fact that the results of almost innumerable observations coincide with the results of those calculations which are made on the assumption of their truth and their universality. The senses, indeed, are both the origin and the verification of physical science, even in its most exact form. And this is even more manifestly true in reference to that extension of these laws which has been made in modern times, and which is known as the conservation of energy.

19. There is, however, another idea which our senses also suggest in regard to material things, the idea of force as that which causes either motion or a resistance to motion. In dynamics, or the science of force, this is measured by the velocity it would generate, if acting uniformly on a unit of mass through a unit of time; and if this effect of the force be known, the effect when the conditions are altered to other known conditions may be determined. But while science can thus investigate and compare the several effects of that which is called force, it teaches us nothing whatever, except in one particular case, of the causation itself. The one case in which the causation of motion is the necessary consequence of our original conceptions of material substances is when two or more incompressible bodies, having different motions, come into collision; and then the cause of the resulting motions is known to be the antecedent motions, the effects being determined by those laws of motion which are essential to matter, as we conceive it. But in every other case of the causation of motion the word force is merely the disguise of our ignorance; it stands for the unknown cause of certain effects. But if no reason for the causation can be given by science, this means that science is unable to determine the law of the force as a necessary truth; and, therefore, the aim of science is, and must be if the domain of reason is to be

extended, to get rid of all unknown forces, and to explain them as modes of motion which produce other motions as the necessary consequence of matter being inert and occupying space. I need merely refer to the modern theories of light and heat and molecular action, and, above all, to the vortex atom theory, as illustrations of this continual and ever-increasing tendency of true physical science.

20. But it will be needful to consider a little more carefully this very important principle, that no law of force, indeed no physical law whatever, can be accepted as a necessary truth, unless it can be exhibited as a sequence of cause and effect, the reason of which is known. Because if the reason be unknown there is no security whatever that the same antecedents will always be followed by the same event. I am glad here to use the language of so acute a logician as Professor Jevons, who in his preface to his treatise on logic and scientific method, expresses his "strong conviction that before a rigorous logical scrutiny the reign of law will prove to be an unverified hypothesis, the uniformity of nature an ambiguous expression, the certainty of our scientific inferences to a great extent a delusion." In that work he argues that "no experience of finite duration can be expected to give an exhaustive knowledge of all the forces which are in operation. There is thus a double uncertainty" as to the uniformity of natural laws. "Even supposing the universe as a whole to proceed unchanged, we do not know the universe as a whole. Comparatively speaking, we know only a point in its infinite extent, and a moment in its infinite duration. We cannot be sure then that some fact has not escaped our observation, which will cause the future to be apparently different from the past; nor can we be sure that the future will really be the outcome of the past." (*Principles of Science*, vol. i. p. 169.)

21. It appears then that the tendency of the human mind to accept as necessary laws sequences which, within the limits of human experience, are found to be uniform, but the causation of which is unknown, is not an obedience to reason, but rather a subjection to sense. The recognition of the uniformity, and the classification of apparently diverse phenomena as results of one natural law, are in themselves triumphs of reason over sense; but when it is further supposed that the phenomenal laws thus established, by an induction necessarily imperfect, are safe from exceptions or even reversal, this is to follow the suggestions of the senses and to abandon the guidance of reason. In fact, there are found not unfrequently what seem to us in our ignorance arbitrary exceptions to phenomenal laws, such, for example, as the expansion

of water as its temperature is reduced near the freezing-point, which though undoubtedly no exceptions to the true law of causation, yet warn us against admitting any sequence the reason of which is unknown, as a necessary law. Of all phenomenal laws, the one perhaps of which the evidence from observation in favour of its universality seems the most complete is the law of gravitation. But if we knew the true cause of the phenomenal law that each unit of mass attracts every other inversely as the square of the distance, we should probably ascertain many conditions under which the results would be at variance with what in the present state of our knowledge we call the law. For example, Sir W. Thomson has pointed out that if Le Sage's explanation were the true theory, some crystals might have different weights according to the position in which they are held, and that thus work might be done by gravity without expenditure of energy; in other words there would be an exception both to the law of gravitation and to that of the conservation of energy, as we now understand them.

22. It is, indeed, only in very few cases out of the infinite multiplicity of phenomenal laws that science can make even an approach to the true law of causation. But even if the wildest dreams of modern science were fulfilled, and all such forces as elasticity, the attraction of cohesion, electricity, and the like, could be exhibited as necessary results of certain combinations of mass and motion,—and at present the mathematics are not in existence which can accomplish this, yet there would still remain the infinitely varied and complex laws of chemical forces and agencies, the reasons for which, as far as we can judge, lie entirely out of the range of all possible human knowledge. Why water, that is a combination of certain proportions of (what we know as) oxygen and hydrogen, should be what it is, and not something else, is a problem which, although it refers to a phenomenon the commonest and apparently the simplest in nature, we cannot, in the present state of our knowledge, conceive to be capable of ever receiving such a solution as to be intelligible to the human mind.

23. And we must proceed still further. Even though physical science could prove all natural laws to be sequences of cause and effect, necessarily determined by the constitution of matter as we conceive it, this merely removes the difficulty a step further from us, and leaves science as incapable as ever of proving them to be necessary truths. Our conceptions of material substance are nothing more than the generalization of effects produced on our senses, but the objective reality may be, or rather must be, something quite different. If the

original material be supposed, as in the vortex atom theory, to be an incompressible fluid, what is the cause of its subsistence as such? Our reason can give no account of this, and therefore cannot accept it as a necessary truth. Or, if we adopt a theory like that of Boscovich, and substitute for material substance an infinite succession of centres of forces, that is of unknown causes arbitrarily changing their effects, to account for the results we observe in matter, this is, of course, to remove the whole question at once entirely out of the sphere of reason, and to make the whole foundation of physical science purely empirical.

24. We must conclude, therefore, that even as regards the phenomena of inanimate nature, while the value of physical science is very great in tracing in all directions the operation of orderly sequences of cause and effect, yet it can claim no authority for its conclusions as necessary truths, to which exceptions cannot occur. It is the exponent of Reason only in a limited degree, as investigating the logical deductions which must follow, on the supposition of certain laws being assumed to be invariable, without giving us any certainty as to the universal truth of the assumptions. And this, which is sufficiently evident even as to the phenomena of inanimate existences, is much more apparent when we consider those of organic life. Our knowledge in regard to this is, and must continue, purely empirical; and the conditions are here so variable and complex that it is impossible to attain to anything approaching that exactness and completeness, even as regards phenomenal laws, which science imperatively demands in the inorganic world. And it is certainly impossible to conceive any extension of human knowledge, by which these could be established as necessary truths. On this branch of the subject, however, it is unnecessary to dwell, for if material substance contains mysteries insoluble by reason, much more does life.

25. (II.) The second of the grounds on which it is claimed that science should interfere with religious belief, viz., that as the result of physical science is to establish the universality of law, therefore there is no room left in the material universe for a governing will, it might seem unnecessary to examine here, since its fallacy has been often and sufficiently exposed. But one aspect of the question requires a brief notice, as it does not appear to have received the attention it deserves; I mean the evidence which physical science itself supplies or suggests, that law of itself leaves all the problems of the physical universe indeterminate, and that will must be premised in order to determine any of those particular solu-

tions in conformity with law, by which the universe is what it is.*

26. First, then, it must be observed that both revelation and science—not physics only, but also the theory of evolution—point to an original state of the universe, when it was “without form and void.” Was it developed from this initial state into its present condition by law only, or, as Holy Scripture teaches, by the Divine Will determining the operations of law? The investigations of physical science, we will allow, prove that the multiplied and manifold differentiations which have resulted in the present aspect of nature took place in accordance with physical laws. But the question is, whether this complex, and unsymmetrical, and exceedingly diversified structure of Nature, could be the result of forces acting without any guidance whatever except that of law.

27. Of what kind, then, must the original state of the universe be conceived to have been, in order that such a result might be produced merely through the mechanical operation of forces? According to the theory of evolution, it must have been homogeneous. Mr. H. Spencer, in his *First Principles*, has a chapter on “the instability of the homogeneous”; and the changes supposed to be produced in the universe through the action of the several parts on each other, according to the nebular hypothesis, are adduced as an illustration of the process of evolution. But his argument obviously depends on the assumption (to use his own words) that “the several parts of any homogeneous aggregation are necessarily exposed to different forces, forces that differ either in kind or in amount; and being exposed to different forces they (the several parts) are of necessity differently modified.” But in the case of the universe we may just as well assume at once the variety of results as the variety of forces. Something must have determined the variety of forces; it cannot have arisen from the mutual action of the parts, for the structure is, by the supposition, homogeneous. If the universe should be supposed infinite and homogeneous, and, for example, the forces acting on it the mutual attraction of each particle, every particle would then be acted on by equal and opposite forces, and no change whatever could take place. If it were finite, the only effect could be the concentration and, so to speak, the crystallization of the whole mass. The variety of nature

* In a very able article on Supernatural Religion in the *Church Quarterly Review* for April, 1876, this principle is assumed. But it cannot be assumed without some proof that it is consistent with the teachings of physical science, and indeed, as there stated, it seems fairly open to question.

necessarily implies the introduction of some other element besides that of uniform law. One arrangement may by its heterogeneity of structure and its different forces be developed into another yet more varied, with nothing but law to direct it; but that which is homogeneous can never become varied by law alone. Variety itself thus points to a higher origin than law.

28. The fact is that it is a fallacy, indeed an absurdity, to suppose that physical laws of themselves determine results. In the first place, these depend on the arrangement of the antecedent causes; the self-same laws will produce an infinite number of results, and these not only different, but contrary to one another, according as the arrangement is altered. To use the words, again, of Professor Jevons, "The problem of creation was what a mathematician would call an indeterminate problem, and it was indeterminate in an infinitely infinite number of ways. Infinitely numerous and various universes might then have been fashioned by the various distribution of the original nebulous matter, though all the particles should obey the one law of gravity." . . . "Out of infinitely infinite choices which were open to the Creator that one choice must have been made which has yielded the universe as it now exists." (*Principles of Science*, ii. 434.)

29. I do not feel certain that the eminent writer whose words I use means here what his language seems to imply, that the exercise of will in the original constitution was of itself sufficient to determine the conditions of the universe ever after; for he condemns as a "superficial and erroneous" notion, derived "from false views of the nature of scientific inference," the supposition that the course of nature is to be regarded as being determined by invariable principles of mechanics, and the idea that "even if the origin of all things be attributed to an intelligent creative mind, that Being is to be regarded as having yielded up arbitrary power, and as being subject, like a human legislator, to the laws which He himself has enacted."*

30. However, let us for the moment suppose it possible

* At the same time he says: "We may safely accept as a satisfactory scientific hypothesis the doctrine so grandly put forth by Laplace, who asserted that a perfect knowledge of the universe as it existed at any given moment would give a perfect knowledge of what was to happen thenceforth and for ever after." It may be a grand idea, but as it involves that which is a contradiction, the knowledge of infinite and infinitely varied causes and arrangements of causes, and the exercise of logical reasoning on all these, it is an idea which merely embarrasses the question:

that out of the "infinitely infinite" methods of original disposition one might have been chosen that by the mutual action of its parts according to uniform and fixed law should produce the universe and all its developments in time, exactly and in all respects such as it has been, as it is and ever shall be. An infinite mind must of necessity foresee all the infinite results and outcomes, and foresee them as the results of the original constitution, and therefore all the subsequent effects are really determined by that mind. The objection which is sometimes urged against this mechanical view, that it throws the Divine action into an infinitely distant past, and excludes Him from the present, argues an imperfect conception of the Divine mind, which is equally present throughout all time; and every effect of a perfect machine is as truly the effect of will, when it is comprehended in the original design of the machine, as when it is produced by the will of the workman acting through the machine. So that even on this strictly mechanical view it must be admitted that the whole outcome of the universe is the result of will acting by law. Much has been said of the "molecules" having the characteristics of "manufactured articles," and different reasons, which may justify their being so called, have been discussed; but it is sufficient explanation that they have the character of those articles which are produced by human will acting by law, that is, either by machinery or by the aid of some chemical or other physical agencies. And is there not exactly the same reason to pronounce the various products of nature to be manufactured? What, for example, could more completely answer to the character of a "manufactured article" than the water which nature manufactures, according to physical laws, in quantities sufficient for organic life, yet not so largely as to destroy it? and how could mere law have determined that out of all the "infinitely infinite" combinations of atoms that were possible, this one combination should hold the particular position which it does hold in the economy of nature?

1. However, this does not exhaust the question by any means. So far as proving that the operation of will cannot possibly be excluded, it is sufficient. But having once allowed the action of will in the Universe, is it possible to limit it, or to exclude it from any part of space and time? It may not be possible for us to prove that the present Universe could not be the mere outcome of mechanical action; in fact, we cannot argue on a problem in which the factors are not only infinite in number but infinitely different in magnitude and in kind. When we attempt to reason on such a problem, we are merely

brought to absurd or contradictory conclusions. We can only say that as the regularity of nature indicates law, so the irregularity of nature, its infinite variety, its unsymmetrical complexity, points no less distinctly to will acting, not without order, in accordance with law. But, indeed, no reasonable account can be given of a Divine will acting and then ceasing to act; whereas an eternally active Will is involved in the very idea of God, and none will question that if Will has at all acted in the Creation of the Universe as it exists, it must be the Will of One who is both Eternal and Infinite.

32. No doubt the difficulty which many scientific minds feel in regard to this question is, that it seems to them impossible that Will should determine results in the Universe, without being somewhat of the same nature as a physical force; and from any idea of this kind the scientific mind recoils as at absurdity. But surely the analogy of the actual operation of the relations, whatever they may be, between organic life and law, ought to be of itself a sufficient reply to any such objection. Much of the infinite variety of nature is due to the fact that besides the mechanical forces of the physical universe, there is what we understand by life. Nothing seems to be more clearly established by science than that life creates no force, that it adds nothing to the stock of material energies, but that in all the phenomena of life that which already exists is employed to produce the results. When a plant springs up from the earth and, apparently in defiance of the laws of gravitation, throws out its shoots into the air, and forms its leaves and blossoms and fruit according to the laws of its own growth, this is no contradiction to the laws of inorganic matter, nor are the material energies which produce this result something which did not exist before. It is merely that those physical agencies, for which the environments of the plant supply the materials, are called into its service; for life is in some sense, and to some extent, quite beyond our knowledge, the master, while the material energies are its servants.

33. Without in the least professing to explain that which to finite reason may be inexplicable, yet it may illustrate the meaning, or at least somewhat aid the conception of this, if we take simply the case of kinetic energy, which, as is known, is in proportion to the square of the velocity, and is measured by half the product of this quantity into the mass. No, by the law of the conservation of energy, the sum of all the energies of a system can neither be increased nor be diminished by the mutual action of the parts of the system. In regard to this, life introduces no change whatever. At it must be observed that this law is quite insufficient of itself

to determine the actual outcome of the action of these energies. That depends also on the direction in which each force operates or each particle moves ; so that there might be an infinite number of different results of the same energies, according to the different directions of the motions only. But the law of the conservation of energy, of which some speak as if it bound up all nature in the iron chains of necessity, has nothing whatever to do with direction ; and its mathematical expression represents the energies as signless quantities, that is, as those the direction of the action of which is absolutely indeterminate. Indeed, many illustrations may be found of the truth that the direction of motions may be altered indefinitely, and the nature of the work done changed to any extent, without any expenditure of energy. This law, then, of the conservation of energy does not touch the very principle that determines the ultimate outcome of the energies employed.*

34. Whether life modifies the result of energies by affecting the direction of motion, or, which is possibly the same thing, by transforming one kind of energy into another, or in any other way, does not signify ; at all events, the fact remains, that living organisms introduced into inanimate material affect it most extensively, so that the results are totally different from those which would be produced if those organisms were not there, although not the least change be made in the sum of the energies. This, which is sufficiently apparent even in regard to the lower forms of organic life, is even more evident when we consider the development and action of animal life, to which the same principles apply. The argument is not affected by the question whether or not animals are altogether the creatures of their own environments. Whatever may determine them, they, without doubt, very largely affect and modify the operations of physical laws in

* I am aware that an illustration, somewhat similar to this which I have given, or rather the inference from it as to the influence of Life and Will in the physical universe, is rejected by the authors of the *Unseen Universe* on the strange ground of the confusion which it would cause in the minds of beings superior to man, who must be supposed to know all the mysteries of molecular action, and, it would seem, regard the laws of such action as the ultimate realities in the universe. If it were necessary to give any answer to an argument which, characteristic as it is of the authors, can hardly be considered serious, it would be sufficient to reply that, from all we learn of such superior intelligences from trustworthy sources, nothing would confound their minds so much as the least apparent deviation from the most fundamental of all laws, that the Will of the Lord God Almighty governs all things in Heaven and earth.

the objects that surround them, as well as in their own bodies.

35. The human will, however, which is not merely influenced by circumstances, but derives motives from reason, and is finally self-determined, and not only uses the energies of nature unconsciously, but employs them to fulfil man's own purposes, with a knowledge of the laws of their action, yet without altering in the least their amount—in other words, in perfect conformity with physical laws,—is a proof of the power of the will to determine the outcome of physical energies which has been often urged, and is of itself abundantly conclusive. Sometimes, indeed, the analogy is pressed too far, and it is forgotten that the will, the efficacy of which throughout the universe we assert, is the will of Him who is Eternal as well as Infinite. But those effects of will which we every day experience leave no excuse for the argument that law excludes will. On the contrary, while we conclude from various indications that law without will could not have created the universe as it is, we are further assured that since that will, from the nature of the case, must be the will of Him who is infinite in power and in knowledge, and who fills all space and time with His presence; therefore the Divine will must be the ruler of law in all its manifold operations, so that no single event in heaven or earth can be independent of that will;* and although in most of these events the operation of law alone may be apparent, and the designs of will are concealed, whilst in others, as in those which we call miraculous, it is the express purpose to exhibit the power of the will of God, while the law by which it works may be hidden from us; yet in both classes of events it is equally certain that will directs law, and that the Divine will and the Divine order are in perfect harmony.

36. It appears then that neither on the plea of being the exponent of reason and the teacher of necessary truth, nor on that of establishing some general principle contradictory to the supremacy of the Divine will, is physical science at all competent to control or interfere with religious belief. The conclusion is that we must relegate science to its legitimate position as one of the modes of regarding God's universe; one of the utmost value so long as it confines itself to its proper sphere, but which, when it claims a supremacy to

* This argument does not, of course, include that which is a much deeper mystery than the relation of Will to Law,—the question of the relation of the Divine to the human.

which it is not entitled, not only tyrannizes over the human mind, and makes it a slave to unrealities, but is in the highest degree irrational; and though the slave of the senses is no doubt the meanest of all, the condition of the slave of law is of all the most hopeless. If the one is the publican, the other is the Pharisee of humanity, indeed a Pharisee beyond all others; for he not only believes that he is "not as other men are," but he thanks himself, not God, for his fancied superiority.

The CHAIRMAN.—I beg, in the name of this meeting, to tender our thanks to the author of the paper for his very able and valuable disquisition.* We shall now be glad to hear observations upon it from those present. The subject is a very important as well as a very comprehensive one.

[After a pause;]

Rev. Preb. IRONS, D.D.—I should have preferred it had some other member been first to speak upon the subject which the Right Rev. Prelate has brought before us with such remarkable power. There is always a danger that the opener of the discussion should fasten upon some points which are only *obiter dicta*, and which do not involve anything vital to the whole view of the question brought before us. There is some difficulty in avoiding this on the present occasion, but I will endeavour to do so, because the main subject which has been so strikingly exhibited is that which ought to engage our attention. Nevertheless, I shall say, at the outset, that there are one or two points in the latter part of the paper to which I would more fully refer, if I were sure that there was no danger, by so doing, of losing the interest of the principal subject. I will but intimate what these points are, and then pass on. In sec. 35, this statement occurs,—“while we conclude from various indications that law without will could not have created the universe as it is, we are further assured that since that will, from the nature of the case, must be the will of Him who is infinite in power and in knowledge, and who fills all space and time with His presence, therefore the Divine will must be the ruler of law in all its manifold operations, so that no single event in heaven or earth can be other than the fulfilment of that will.” Literally understood that would, it appears to me, be found to make moral responsibility an impossibility. Other indications of the same idea will be found in §§ 13 and 14, but I am quite sure that the Right Rev. Prelate will say something upon that subject that will save us from any conclusions of so perilous a kind.—And now, as to the paper itself. It seems to me

* Letters in regard to the paper were received from the Bishop of Manchester and Canon Cook; the former “was much struck by the ability of the argument”; the latter said,—“I consider it a paper of the highest excellence; I am wholly mistaken if it does not deal with the deepest questions in a way that will carry conviction into the minds of candid and perplexed inquirers, and shake deeply-rooted prejudices which have long obscured intellects of high order. It is a noble discourse.”

impossible that there should be condensed better statements than those we have just heard, which shut out science, for ever, from reasonably interfering in the domain of theology or religion. (Hear, hear.) We certainly seem, as the Bishop has stated, to have arrived at a period when there is a change coming over men's minds in this matter. A part of the scientific world is rather taking refuge, in what seems to me a somewhat cowardly spirit, if not a spirit of hostility; but it looks, I say, somewhat cowardly for scientific men, when they find they cannot trace the causes of things, to say that they therefore must leave them to be determined by some invisible physical motor. They profess at once, indeed, what they call agnosticism. But they do not see that it is not quite fair that they should deny that there is a superphysical sphere of action and being. Because they know that life exists as a fact, and that causation is actually a fact; that matter is inert; that germs of life must be found somewhere before you can have evolutions of life; and as they admit all that, it would be more generous, more noble, more truth-loving, if they were candidly to make this admission—that as there is life, there must be something beyond our physical scientific sphere to account for it; in which case many physical cavils have been without reason. I think that the five-fold divisions of Fichte, which Bishop Cotterill has so clearly explained and commented upon, cannot be too highly estimated. It is quite clear to any one contemplating the five spheres of thought, indicated by Fichte, that the position taken by our opponents is to be traced, not to the lowest or the “sensible” sphere, but to that which is almost the lowest—that of sense *plus* logic; and we have given to us by him an account of the active operation of the mind, even in combining the sense and the logic. The logical process itself has a beginning in Causation; but of that the scientific theorists give physically no account. They surely intimate that they revert to a superphysical sphere, even in using the very reason which brings them to their scientific conclusions. As science has plainly been driven to this by the force of its own investigations, as well as by the close watchfulness of philosophy, it must, in future, vacate the ground of purely religious controversy as to causes. I think that these higher spheres—and the fifth especially—which Fichte has pointed out, will eventually show us that there is something beyond; and that we cannot be at length refused the knowledge of the absolute and the infinite, since, indeed, we have recourse to them in approaching the nature of God and in recognizing His presence—at all events, if not the latter, the former. Evidently, ontology of some kind is inevitable in the future. We have neglected it too long. As I have thus expressed in a few words my admiration of this Paper, my conviction that it will lead to great results, and my hope that a few little points which seem contrary to moral ideas may be cleared up; it is right, perhaps, that I should leave to others the discussion which I thus briefly and imperfectly touch. (Cheers.)

The DEAN OF LICHFIELD.—I should think myself very presumptuous if I were to undertake to offer any comments upon so comprehensive, intellectual, and able an address as this, after so short an acquaintance with it as I have

had from hearing Bishop Cotterill read it; but I am very glad to have the opportunity of expressing my general appreciation and admiration of the whole paper. I do not see the difficulty that Dr. Irons has seen in the particular passage he has quoted. I imagine that the Bishop's words are in perfect consistency with what Revelation itself tells us, that "whatsoever the Lord pleased, that did He in Heaven and earth, and in the sea, and in all deep places." If I might venture to add one other observation, I would say that I hope no one who has hitherto applied his mind merely to the second branch of the subject to which Bishop Cotterill has alluded, will be at all discouraged from the endeavour to penetrate those higher and nobler realms which lie beyond. On the contrary, I am persuaded that the man of faith has an enormous advantage in dealing with questions of science. With regard to the man of science, much as we are indebted to him for what he has done for us (and for myself, I must say I feel under great obligations to every one who truthfully and honestly applies his mind to the investigation of great scientific truths), I cannot but feel that without exploring those higher realms he lacks something in moral force. It would be an enormous advantage to him, and would give a higher elevation to all his thoughts, if he were to apply his energies and powers to the investigation of these subjects, with which he ought to be more familiar. I am inclined to think that there may be something in the thought that it is possible, that by a succession of inductions we may at last, by scientific methods, reach a point at which we shall see that the whole of the universe around us is the product of one universal Intelligence pervading all things. I thank the Bishop very heartily for his masterly and suggestive paper.

Rev. D. GREG.—I should be obliged if you will allow me to express my great appreciation of the paper which we have had the good fortune to hear read this evening. I am quite sure that all those who have been occupied, as I myself have to some extent been, in studying these questions, will feel, as they go through this paper, that the author has really got to the bottom of the subject. It is the paper of a man who has really worked out the question he has set himself to consider. You see this in every sentence, and there are many indications of that which probably to a person unacquainted with the subject would not be very evident, but which are clear enough to those who have studied the question. Therefore I look upon the paper as one of very great value. There can be no doubt that the subject is the great subject of the day. It distinguishes the respective spheres of science and theology. Now this is rather too hard a question to discuss in an extemporary manner, but I must say that the more one studies the point, the more one sees that there are really two spheres. There is really one half of nature which it is impossible for science to touch. Science deals with only one side of nature, so to speak. The points of distinction have not yet been exactly defined, but still they are very palpable, and what gratifies me especially in this paper is that it takes up and brings out in a very clear and telling way one effect of the distinction which probably

those who have not studied the subject may have overlooked. If his lordship will allow me to refer to an incidental remark contained in his paper, I will do so very briefly. I know that there is the great danger, of which my friend Dr. Irons has warned us, of taking up points which really do not belong to the essence of the paper. But his lordship quotes from an article in the *Church Quarterly Review*. The remark which his lordship makes refers to a point that was not very fully discussed in that article, but was simply alluded to, and if I may be considered in order, I might explain what I consider to be there set forth. The point is—How it is that one half of nature belongs to religion or theology, and the other half to science? In this way; science takes cognizance of causation—cause and effect; theology of the mechanism which makes cause and effect possible. You cannot have cause and effect except as part of a mechanical system; and you cannot have a mechanical system except as the production of a mind. Hence, while science takes cognizance of cause and effect, or, as we say, of the laws of nature; theology takes cognizance of those mechanical arrangements which make the laws of nature possible. Formerly, under “the mechanical theory,” God was supposed to have completed the mechanical arrangements of nature once for all, but now, under the theory of evolution, these arrangements require to be renewed from day to day. That Science cannot go beyond the laws of nature, that she cannot take cognizance of that mechanism which makes these laws possible, is clearly shown by scientific experiment. Before the laws of nature which the experiment is to illustrate can come into play, mechanical arrangements must be made, and they can only be made by the mind of the experimenter. The experimenter must first of all find the bodies he is to experiment upon, and then he must put them in their proper positions, so as to make a mechanical system out of them. Then, and then only, do the laws of nature, to be illustrated, come into play. Here, therefore, we have clearly two factors, the mind of the experimenter and the laws of nature, conspiring to effect one result; that is to say, in other words, we have illustrated the respective spheres of theology and science. If we look more closely at what I have designated as “mechanical arrangements,” you will find that it consists of three things—the individual existence of bodies, their order in space, and their order in time. Now you have only to look into a manual of science to find that these three particulars are always postulated. The formula of science is, “if so and so, then so and so.” What does this “if” mean, but that these three particulars which constitute the mechanism of nature, viz. the existence of bodies, and their order in space and time, lie outside the sphere of science and must be postulated. They belong not to science but to theology. I have only to express my great thanks to the Bishop for his exceedingly interesting paper.

Rev. Prebendary Row.—Although I have read this paper through, I have not had sufficient time to thoroughly master it; hence I do not feel myself competent to discuss it to my own satisfaction to-night. Perhaps, however, the author will allow me to tell him of one defect I thought I found in

reading it. He uses the term "law," as it appears to me, in three or four different senses. This seems, to my mind, to cause a considerable difficulty in getting to the meaning of the paper, and I should require to make a very close analysis of it before I could properly understand it. I am sure it would add greatly to the perspicuity of his paper if the term "law" were used in a more definite sense. My idea is that the term "law" should simply be used in an invariable set of sequences. It seems to me that he uses it to denote force, cause, and invariable sequence, which is to complicate its meaning. Apart from this, the paper generally has my entire appreciation. There are a few points in it that seem to me more or less doubtful, but I quite agree in the author's first remarks. I wish, however, to call attention to one passage. I do not lay much stress on what I consider to be its ambiguity, which, I have no doubt, the Bishop will hereafter explain; but in section 10 of the Paper he seems to lay down that there is no great distinction between physical and moral law. He says:—"Nor is this science, as might be imagined, of a different order from physical science." I think there is a difficulty in this sentence. It seems to me that physical and moral science belong to very different orders of thought. I do not think that the Bishop has expressed what is exactly his meaning. I value the Paper so highly that I should be exceedingly sorry to see it go forth with any defects. I quite agree with the observations the Bishop makes about the subject of beauty, and, as far as my reading of the classics goes, I believe you might count on your ten fingers every allusion to the physical beauties of nature. For instance, the beauties of the scenery of the Lake of Geneva are not once alluded to by Julius Cæsar, who continually travelled through that district. It seems as if the heathen mind were absolutely incapable of perceiving these natural beauties. It is a valuable characteristic of the Paper that it deals with the higher regions of thought, and I should be sorry not to do it full justice. I agree with the writer in deprecating the habit many people have of merely resting the controversy on certain specific subjects, instead of taking a general view, and endeavouring to get to the root of the entire question. I believe that this Paper does go to the root of this subject. There are many things on which we are too much in the habit of attaching importance, because we find there is some little agreement between science and Scripture. But that does not get us over the main difficulty. I am sure that we do a great deal of damage to the cause we are attempting to defend if we spread it over a needlessly wide field. We have seen the result of this error during the present war; when the Russians were extending their forces over an enormously wide surface, they got the worst of it. Those who are engaged in defending Revelation should keep their eyes on this illustration, and endeavour to confine themselves to central positions, and should not allow themselves to be driven from them. They should lay down those central positions which constitute the essence of Revelation, and refrain from going into endless controversy on a set of minor points. It is in this respect that the Paper we have heard is of great value and importance. It deals

mainly with the more vital questions, instead of wasting its strength in endless discussions on a variety of subordinate matters.

Dr. IRONS.—I wish to make one remark on a subject which seems to me worthy the attention of those whom I had the pleasure of addressing a few minutes ago. I feared that I had diverted your minds, in some degree, from the great object of this essay, but what has since been said by Prebendary Row encourages me to hope that he may be induced to read this paper carefully over again, because I think that the point he refers to (in §§ 10 and 11) is one which really ought to be regarded as extremely valuable. (Hear, hear.) The author has warned us, apparently, that there is a lower sphere of moral or social duty which must be determined by law. What he stated, for example, in his system of ethics, shows the way in which duty may be determined by examining the various relations of men to one another; and the author goes on afterwards, on the very next page, with the third of Fichte's divisions, to show that the higher morality really pertains to a higher sphere altogether. I think that when sections 9 to 12 are carefully read once more by my acute friend, he will entirely agree with me that there is no more valuable passage in the whole of the essay than that in which it is pointed out that social law is not merely determined by ourselves, but also by the Divine Will. Then I will hope that the author will find time to say a few words on motion. In section 19 he speaks of motion as generating motion. How it is that motion generates motion it is not very easy to say. There are some wonderful remarks on the subject in Bishop Berkeley's essay, *De Motu*, in which he quotes Torricelli. I should like to know how force can communicate motion, so that it becomes a new force at the next stage of motion. Does the motion create motion, or is a second force created to move the second object—or the third? Suppose a force, at the outset, to touch the first object, does that touch, or the result of that touch, create a force in respect of the second object, and so on to the third and fourth along the whole line of objects? Where is force generated? It seems to me most difficult to understand how it can be as here put; because, either we must place God behind every molecule to direct it, or else, at all events, some real force that begins the movement. I hope I am making myself intelligible as to this difficulty of force creating force.

Bishop COTTERILL.—A metaphysical difficulty.

Dr. IRONS.—Perhaps a mathematical one; but there is a difficulty to me in seeing how force generates force. Of course, we all understand that there must be a cause for everything. Without a cause, could force impress itself on an object? Does a force so impressed become a motion-making power? Does it communicate its own nature to a third and fourth object, and so, all along the whole line, generating continuous action or motion? I myself object to any proposition that brings God, as a force, immediately behind every molecule to give it its direction; and yet I do not quite see how the author can avoid this conclusion, if he will allow me to put it in such a way.

Mr. Row.—I think what I have said has been misunderstood. My general impression of the passage I referred to was that it might lead to such theories as are laid down in Buckle's *History of Civilization*. I agree with Dr. Irons, that there are a number of social forces which are within the region of moral law, but the general theory laid down by Buckle is one which I absolutely dispute. He lays down that human will and man's moral nature are as necessary in their action as the forces of the physical universe. The passage might be supposed to lend a certain degree of sanction to very wide principles, on which a great amount of the unbelief of the present day is erected. I do not suppose the author means to support this view, but I think he is somewhat ambiguous, and that he might be supposed to lend the sanction of his name to some of the general principles laid down by Buckle. Buckle lays down, for instance, that marriages are as necessary as the physical laws of nature, because, having regard to a set of averages, their variation in numbers nearly approximates to the variations in the price of corn. To make his argument of the smallest value they ought perfectly to coincide.

Rev. C. L. ENGSTRÖM.—I do not wish to put myself prominently forward with regard to this most admirable paper, but with respect to the question as to the agreement between science and religion, it has struck me that we may find in science most valuable suggestions as to the non-necessity of endeavouring to make the two spheres *evidently* fit together. I will take, as an illustration, the scientific instrument known as the stereoscope. You will have noticed that in using this instrument there is generally, just for a moment or two, a difficulty in getting the focus of each eye so adjusted as to make the two pictures form one perfect image. It is not unreasonable to suppose that the mind has a similar difficulty in regard to questions such as we have had put before us, and that thus it may be that two conceptions may be made to form, as in natural objects, one complete image, when properly focussed. It seems to me that science and religion bring these questions before the mind (as physical objects are seen by the eye) from different points of vision, and that the difficulty we often have in making some particular point of the Bible agree with some particular point in science, is only like the difficulty we find in focussing the two pictures in the stereoscope. And yet we know that it is *because* there are two distinct pictures in the stereoscope that we are enabled to see one solid image. There was a remarkable article in the *Quarterly* or *Edinburgh* some years ago—an article which drew attention to the way in which the vision is corrected by mental impressions. It was pointed out that if you look at a man when a hundred yards off, the impression on the mind is that he looks nearly as large as when standing only ten yards off. This is a matter of which any one present can judge of the next time he goes into the street. The explanation of it is that the mind is continually correcting the impressions of the senses. This probably runs through the whole of our impressions. We may fancy that we are guided in some matters

by the senses only, whereas there is, in reality, always an inner and correcting influence which brings these things into their proper position. With regard to the remark made in § 11 with reference to the creative and poetic power, I quite recognize that "poetic" formerly meant "making"; but while we can see in nature, by means of this faculty, that which is not cognizable to the senses alone, it is important to bear in mind that we cannot create anything if we could, and that if we were to create anything which is not there, it would not be the truth. It is by a combination of the faculties which God has given us that we are enabled to see in nature that which does not reveal itself to one set of our faculties only. (Hear.) The creative or poetic power is the power which enables us to employ together two or three of the faculties which God has given us, and thus to enable us to produce a higher and truer effect than if the object were only viewed through one. There are two other remarks I would make before sitting down. One with regard to the Darwinian system, or the system of development by evolution; an argument resembling that used by the author, § 27, to prove that the doctrine of evolution is really a false one. It is this, that we believe in the strength of the type, while those who hold the opposite opinion believe rather in the power of the environment. What would be the result of the latter? Why, gradually to draw all the strength from the type, and to bring the whole to a dead level; whereas, our idea is that God has imparted a specific power to the type, and that it is stronger than the environment. If we take the opposite view, it would amount to this, that everything would be brought down to a lower standard. Secondly, I would illustrate § 30 by the works of a clock. The clock goes on denoting the time because it has been wound up, and a certain force has thereby been imparted to it. At intervals another phenomenon arises, which any one not understanding the matter must regard as quite distinct and non-uniform,—the clock strikes; and yet the striking is as much the result of the intentions of the maker as the other portions of the clock's work. I think you may apply this to the miracles related in the Bible. They were simply what was intended in the progress of events from the very beginning. (Hear.)

BISHOP COTTERILL.—There are very few remarks that I need make in closing this discussion. I have first to express my extreme thankfulness for the cordial acceptance that has been given to the principles of my paper; and that has been the main thing about which I have had any anxiety. With regard to the remarks that were made by Dr. Irons, with reference to the use of the phrase that no single event can be other than the fulfilment of Divine Will, I have only to say that it is a Scriptural expression, and I did not mean to imply that this at all interferes with the human will. It does not seem to me that this question is introduced, and I certainly had it not in my mind. I do not think that I can alter what I have written, so as to obviate all objections. With regard to what Prebendary Row has said, I think he has misunderstood my argument. Nothing could be

farther from my mind than the idea that law controlled the human will, and I do not think that that is implied in my argument. The fact is, that the ideas I have expressed here are rather the result of my having worked out Fichte's scheme. I have not used Fichte's arguments, but I have followed his analysis. I think it quite true that social law falls within the same sphere as the law of the universe, as he says ; but I do not believe that this controls the human will any more than that physical law governs it. But with regard to the illustration of Clerk Maxwell's, as to the law of the universe corresponding with the law which God has imposed on human life, and which it is our duty to follow, I may be able to alter the wording, but the doctrine is an important part of the argument, and I could not give it up. With reference to what has been said by Dr. Irons as to motion, I must confess that I hardly understand the difficulty, which seems to me to be a metaphysical one ; and I do not think it necessary to enter into metaphysics. The whole question of the constitution of matter and its motion, involves so many apparent contradictions, that I should be quite at a loss to deal with it here beyond saying that it is entirely and utterly a mystery. I can only once more express my thankfulness for the manner in which my general view has been accepted. (Hear, hear.)

The meeting was then adjourned.

INTERMEDIATE MEETING, FEB. 18, 1878.

THE REV. R. THORNTON, D.D., V.P., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed; and the following Elections were announced :—

MEMBERS :—The Most Rev. R. Eden, D.D., Bishop of Moray, Primus of Scotland, Inverness; T. Hodgkin, Esq., Newcastle.

ASSOCIATES :—The Right Rev. H. B. Bousfield, D.D., Bishop of Pretoria South Africa; the Very Rev. A. Moore, M.A., Dean of Achonry.

Also the presentation of the following Work for the Library :—

“The Great Dionysiak Myth.” By R. Brown, Esq. *From the Author.*

A Paper on the “Creation Legends of Babylon” was then read by Mr. W. St. Chad Boscawen. A discussion ensued, in which the following took part :—Sir J. Fayrer, K.C.S.L., F.R.S.; Mr. J. E. Howard, F.R.S.; Mr. D. Howard, F.C.S.; the Chairman, Mr. J. Coutts, Mr. J. Seeley, Mr. R. W. Dibdin, and Captain F. Petrie. Mr. Boscawen having replied,

The Meeting was then adjourned.

ORDINARY MEETING, MARCH 4, 1878.

J. E. HOWARD, Esq., F.R.S., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed; and the following Elections were announced :—

MEMBER :—The Most Rev. the Lord Plunket, D.D., Bishop of Meath.

ASSOCIATES :—The Very Rev. E. B. Moeran, D.D., Dean of Down; the Venerable Archdeacon G. A. Denison, M.A., Highbridge; the Venerable Archdeacon J. Garbett, M.A., Brighton; the Venerable Archdeacon H. Fearon, B.D., Loughborough; the Rev. W. Eliot, M.A., Vicarage, Aston, Birmingham.

Also the presentation of the following Works for the Library :—

“Proceedings of the Geological Society.” Part 153. *From the Society.*

“The Epoch of the Mammoth.” By Mr. J. C. Southall. *From the Author.*

“A Mathematical Paper.” By Mr. S. M. Drach. *Ditto.*

The following Paper was then read by the Author :—

MONOTHEISM, A TRUTH OF REVELATION, NOT A MYTH. By the Rev. W. H. RULE, D.D.

DID the writers of Holy Scripture receive their knowledge of the One True God by divine revelation; or did they derive it, in any degree, from the mythologies of Egypt and the East?

By reference to the oldest known texts of these mythologies, we are not convinced that they contain even the faintest vestige of pure monotheism.

The first words of the Book of Genesis record that, in the beginning, God created the Heaven and the Earth; and there can be no doubt that our first parents received a knowledge of this creation from their Creator; but as to succeeding generations, an Apostle writes, that “when they knew God,” as the first human family could not but know Him, “they glorified Him not as God, neither were thankful; but became vain in their imaginations, and their foolish heart was darkened. Professing themselves to be wise, they became fools, and changed the glory of the uncorruptible God into an image made like to corruptible man, and to birds, and four-footed beasts, and creeping things.” “*They changed the truth of God into a lie, and worshipped and served the creature more than the Creator, who is blessed for ever*” (Rom. i. 21—23, 25).

Now the statement that, on this lapse into idolatry, man-

kind worshipped and served the creature *more than the Creator*, would not so much appear to indicate utter apostasy from the worship of God, as a confusion of that worship with idolatry, and might seem to favour the notion that, although the truth of God was changed into a lie, the lie and the truth became so commingled, that the latter, proving imperishable, might be eliminated in the course of ages, and that Moses, the Prophets, and the Apostles might gradually recover, and work it up again into a slowly developing system of religion, latterly shaped into Christianity, perhaps to ripen hereafter into something yet more perfect.

But a glance on the original text of the passage I have quoted shows that it cannot so be understood. It does not represent humanity as in divided allegiance between the Creator and the creature, but in a state of apostasy from the truth, lost and blinded with the lie. The words are these:—*Μετήλλαξαν τὴν ἀλήθειαν τοῦ θεοῦ ἐν τῇ ψεύδει, καὶ ἐσεβάσθησαν καὶ ἐλάτρευσαν τῇ κτίσει παρὰ τὸν κτίσαντα.*

They changed the truth of God into the lie, and they worshipped and served the creature *rather than* the Creator. The construction of the words is exactly the same as *παρὰ φύσιν*, *against nature*, a little farther on. The passage is so understood by critics generally, and is closely rendered by the Vulgate *potius quam Creatori*. Utter opposition rather than partial desertion is the idea which St. Paul must have intended to convey; he has conveyed it very distinctly. My object is to show that his language perfectly agrees with the history of the case, for that the generation to which reference is made worshipped the creature *rather than* the Creator.

Moses records evidence of the forgetfulness of God, whereof St. Paul speaks, and it can only be concluded from the text of Moses that, with the death of Abel, divine worship ceased, and was not resumed until after the birth of Enos. "*Then it was begun* (ἤρθη ἡ) *to call upon the name of the Lord*" (Gen. iv. 26, v. 3-7). Doubtless there continued, from the first, some tradition of the One True God, but so far as is anywhere apparent, it was limited to a few, and not uninterrupted in its current. It is not found to have been incorporated with any of the cosmogonies. Systems of polytheism were framed; and in the great nations of earliest antiquity there is not discovered any recognition of His existence, however the rare tradition may have been cherished by a few faithful ones.

By the True God is not merely meant a first, or a greatest; not some one supreme deity by others inferior to itself; not a Baal, with his wife Beltis, and they rejoicing in a growing family of gods; not the chief Son of an inferior father, a

Jupiter Kronides; much less a half-developed something emerging out of Chaos, nor even a Zoroastrian duality, but God over all blessed for ever, having the essential attributes of self-existence, unity, eternity, omnipresence, truth.

We commence our search, hopeless though it be, in the land where Gentile memory first brought a tradition of the creation of Heaven and Earth, the fall of Man, the curse upon the ground, and the drowning of mankind for sin. The first of the creation tablets, containing the account originally written in Chaldea, then translated in Assyria; and at last found and translated into English by the late lamented George Smith, contains, as he calls it, "a description of the void, or Chaos, and part of the generation of the gods."

1. When above, were not raised the heavens :
2. and below, on the earth a plant had not grown up ;
3. the abyss also had not broken up their boundaries ;
4. the chaos (*water*), the Tiamat (*sea*), was the producing mother of the whole of them ;
5. those waters at the beginning were ordained, but
6. a tree had not grown, a flower had not unfolded ;
7. *when the gods had not sprung up any one of them,*
8. a plant had not grown, and order did not exist,
9. *were made also the great gods,*
10. *the gods Lahma and Lahamu they caused to come,*
11. *and they grew.*
12. *The gods Sar and Kisar were made,*
13. a course of days and a long time passed. (*Chaldean Genesis*, p. 62.)

Three other tablets contain a legendary account of creation in general, and on the fifth is that of the heavenly bodies in particular. The legend seems to say that the great gods were born out of their producing mother, the sea, and that they then agreed to some scheme for concurrent action and division of labour. Then, on the fifth tablet, where one of the gods—Mr. Smith supposes it may be Anu—took the matter in hand:—

1. It was delightful, all that was fixed by the great gods.
2. Stars, their appearance (*in figures*) of animals he arranged,
3. To fix the year through the observation of their constellations,
4. Twelve months (*or signs*) of stars in three rows he arranged,
5. From the day when the year commences unto the close.
6. He marked the positions of the wandering stars (*planets*) to shine in their courses,
7. that they might not do injury, and might not trouble any one.
8. The positions of the gods Bel and Hea he fixed with him.
9. And he opened the great gates in the darkness shrouded,

10. The fastenings were strong on the left and right.
11. In its mass (i. e. *the lower chaos*) he made a boiling,
12. the god Uru (*the moon*) he caused to rise out, the night he overshadowed,
13. to fix it also for the light of the night, until the shining of the day,
14. That the month might not be broken, and in its amount be regular.
15. At the beginning of the month, at the rising of the night,
16. his horns are breaking through to shine on the heaven.
17. On the seventh day to a circle he begins to swell. (*Ibid.*, p. 69.)

It is remarkable that, according to the Chaldeans, the god who created the starry heavens, or the moon under his direction, appointed four Sabbaths in every lunar month, but while the original Sabbatic observance was retained, the primitive tradition of the creation was forgotten, and the name of the Creator was lost. An invaluable translation of tablets of Chaldean astronomy, by the Rev. Professor Sayce, published in the *Transactions of the Society of Biblical Archaeology*, contains a note frequently repeated: "*The moon a rest on the seventh day, the fourteenth day, the twenty-first day, the twenty-eighth day causes.*" (*Trans. Soc. Bib. Arc.*, iii. pp. 145, 207, 213, 313.) Here, again, there is no recognition of the True God. The moon is keeper of the months. The moon by his own virtue causes rest. He it is that signals the day of rest. He causes the *Sulum*, peace and comfort. He, the moon, is father of the sun. So did these gods, from the dark womb of chaos, gain increase of strength and glory by development through successive generations.

From those fragments of creation-tablets Mr. Smith elaborated a sketch of the Chaldean theogony, so far as it could be gathered, and he tabulated the result of a very close examination, which may be found in his *Chaldean Account of Genesis* (pp. 60, 64—66). First of all Tavtu (*the sea*) and Absu (*the deep*) appear side by side, as the primordial elements of the universe. These might seem to be the same at the תַּוּ and אָבְסוּ of Genesis, if it were not that the chaos of the Greek, instead of being the world in a state of emptiness and confusion, is confusion itself. The Chaldeans made of it a distinct thing, born, as it were, of the other two, called in the tablet *Mummu*, explained by *chaos*, and thought to be equivalent with מְרוּמָה, if such a word is to be found in Hebrew or Chaldee, which may be doubted. However, out of Mummu come Lahma (*force or growth*) and Lahama, which may be feminine of Lahm; and from these two, whether principles or persons, proceed Kizar (*the lower expanse*), and Sar (*the upper expanse*). How sea and deep came into existence is not said, nor how they produced confusion, nor how confusion produced the two expanses, nor what is meant by the

two expanses. But that matters not. After the expanses come Anu (*heaven*) and his wife Amatu (*earth*), formed or born out of the lower expanse; and Bel, with his wife Beltis, out of the upper expanse. Now comes an abundant progeny of gods; Vul, god of winds; Vulcan, god of fire; then gods, planets, stars, men. Until Bel and Beltis made their appearance there was no sign of vital energy, but only a lingering, dull development of one knows not what. Surely there was no god in the beginning of this mythology, and when the first tablets were written polytheism was absolute.

But were the wise men of Egypt more successful? Moses mastered all the wisdom of Egypt, and some fancy that he might have utilized it in compiling the Book of Genesis; which, if so composed, could not be an inspired book: and in framing a code of laws for the Israelities; which would imply that those laws were invented by Moses, and not delivered to him by the Lord.

It is indeed quite possible that uninspired writings might contain some vestiges of true tradition, and, in fact, many authentic writings confirmatory of Biblical history have been recovered, and are of inestimable value. But those writings are very various, and must be made use of with discrimination.

Historical monuments, such as the annals of a king, the account of a battle, or the conveyance of an estate, or the notes of an astronomer, may be at once accepted as material of history, and much of the historical portions of the Old Testament is both confirmed and illustrated by original inscriptions from Babylon, Assyria, and Egypt.

Tradition of events and legend have great value; not always for direct confirmation, but very often indeed for the elucidation of parts of Holy Scripture which could not be fully understood without a knowledge of contemporaneous literature. Hymns, divinations, charms, blessings and cursings, yield much instruction, and afford points of both comparison and contrast with the Sacred text.

Mythology, however, lies beyond the verge of all reality, is totally different from all tradition of events, and for the confirmation or understanding of divine revelation it is naught. It adds much to the history of error; it can have contributed nothing to the revelation of truth.

We are sometimes invited to believe that the Egyptians possessed knowledge which could only have come to them by revelation, or have been evolved by themselves from some tradition of primeval faith, and made part of their own religion, at the beginning nearer to truth than it afterwards

became; and my present object is to show that their writings before Moses did not contain anything that could have suggested to him what he writes concerning God and the Creation. My first reference, for I cannot quote Egyptian, shall be to the work of Professor Lepsius on the Oldest Texts of the Book of the Dead, wherein he produces texts of the seventeenth chapter of that collection of sentences, containing a full exhibition of the religious belief of the Egyptians,* and translates this chapter into German.

He places in parallel columns two specimens; one from the sarcophagus of Mentuhotep, a king of the eleventh dynasty, which is said to have begun 2,240 years before Christ, and one from a papyrus of the twenty-sixth dynasty, which began 664 years before Christ, 1,576 years later than the commencement of the former. Considering that the earlier of these dynasties, though counted as the eleventh, was in reality the first Theban dynasty, and that Mentuhotep probably died within the second century after the Deluge, and lived at the same time with some members of the family of Noah, the sentences written on his coffin represent the religion of his day, and show what was believed in Egypt concerning the gods about 600 years before Moses. It is headed: "The Chapter of the uprising of the dead in the day of days in the underworld," and reads thus:—"This is the word. I am Tum,† one being, one thing. I am Ra‡ in his first dominion. I am the great god, existing of himself, the creator of his name, the Lord of all gods."

The same words, with enlargement, reappear on the papyrus, and show how they are understood after the lapse of at least fifteen centuries. The earlier text is now in italics. The heading is: "*The chapter of the awakening of the dead, of the uprising, and of the entrance into the underworld,*" &c. Then follows: "*This is the language of men, spoken concerning Osiris Aufanch the Justified. § I am Tum, as one being, that am one thing, as primal water. I am Ra in his dominion, in the beginning of his reign on which he has entered. What does this mean? It means that Ra, in his dominion, in the beginning of Ra reigning in Hat-Suten-Chunen, as a being from himself arisen, the exaltation of*

* The whole book, so far as contained in one of the best manuscripts, is translated into English, with copious commentary, by Dr. Birch in the fifth volume of Bunsen's *Egypt*.

† *Tum*, the setting sun.

‡ *Ra*, the risen sun.

§ The deceased, like *ὁ μακάριος*.

Nun,* who is on the height of Am-susennu, who has brought to nought the rebels on the height of Am-susennu. *I am the great god, existing of himself*; that is to say, the water, the divine original water, the father of the gods. What does this mean? The great god, existing of himself, is Ra, the father of the gods; or also, This is Ra, *the creator of his name*, as *Lord of all gods*. What does this mean? This Ra, the creator of his members, which are become gods like unto Ra."

If the assertion, "I am the great god, existing of himself," meant, unexplained, what it would seem to mean, it might be fairly inferred that the Egyptians did really entertain that conception of Godhead which prevails unchanged in all the books of Holy Scripture; but it is not so explained, nor could ever be so understood. Now, if the name of this Egyptian god *Tum* be really the same as תוּם, *the deep*, or the primeval ocean, and if this word was originally Egyptian, and fell into the Hebrew language, retaining that sense, it only confirms, once more, the belief that those ancients supposed all things to have originated in the waters; and the paraphrase in the second rendering only shows that in the long interval between these two issues of the *Book of the Dead*, the grand conception of an essential and undivided godhead had made no advance; but we shall soon see that no such conception ever followed from it. Nay, though it certainly existed elsewhere, it was absolutely precluded from the mythology of Egypt, where an incipient pantheism, from the very first, had invested all gods, men, and consecrated things with a common attribution of divinity. The great god, the father of all gods, *Tum*, *Osiris*, *Ra*, is self-existent in a way peculiar to himself; for the words in which men declared the dogma, pronounced that he *was* water, that he *derived existence from* the water, that he was exalted out of *NUN*, another name for *the deep* over which darkness hung. The same symbolic document said of him that he *was water, the divine original water, the Father of the gods*. He was also *Osiris*, he was also *Horus*, yet in relation to all these he was one, and this godhead we find immeasurably widened. At Thebes he was the local god, and there they called him *Amen-Ra*. A hymn to him, translated by Mr. Goodwin, has been much quoted, and by some is considered to prove that the Egyptians believed in the True God,

* *Nun*, the abyss, the immensity of the heavenly waters, on which floats the solar barge. It is also the deification of the primal waters (Pierret, *s. v.*).

and that the priests and wise men worshipped him esoterically. It may be found at length in the second volume of *Records of the Past*. The very same praises are paid to the river Nile in a hymn written in the nineteenth dynasty, in the time of Moses, or near it, translated by Canon Cook, and may be found in the fourth volume of the *Records*. The river is addressed by the names of Amen, and Ra, and Ptah. If one could forget that it was to be sung to a river, he might imagine that Joseph had penned it to the honour of his father's God.

"He maketh his might a buckler.
He is not graven in marble.
As an image bearing the double crown
He is not beheld.
He hath neither ministrants nor offerings.
He is not adored in Sanctuaries.
His abode is not known.
No shrine is found with painted figures."

This is noted as a relic of primeval monotheism. At first reading, it awakened my admiration, but I now cease to admire, and am gratified to find myself in accord with the learned translator, who, in the *Transactions of the Society of Biblical Archaeology* (ii. 365), truly says that it consists of little more than high-sounding epithets of the god, some of them containing allusions to mythological stories not very intelligible, and strung together without any obvious law of connection. In short, the cosmogony and the theosophy of Chaldea and of Egypt exactly agree in ascribing the birth of the gods to a sort of spontaneous generation from the water of the Great Deep. Many of us are familiar with the same notion, as repeated by Latin and Greek poets. We have read it in the Theogony of Hesiod :—

"But chaos was first of all, then after chaos the wide-spread land,
Firm dwelling for all the immortal gods" (116-118).

Here it was not the spirit of God moving on the face of the waters, where to complete the work of creation of heaven and earth previously begun, as the context in Genesis may imply ; or to revisit the emptiness and restore from the confusion a world once well ordered, but, like some ruined city, laid waste (compare the Hebrew text of Gen. i. 2, and Is. xxxiv. 11) and without inhabitants. There was not in all those figments any image of one eternal God and omnipotent Creator. Perhaps a more perfect exemplification of the latent and resistless Pantheism of those mythologies cannot be found than in the celebrated Orphic hymn rendered as closely as possible

from the copy preserved by Eusebius, and exhibiting its outgrowth in the West :—

“ Zeus was born first, Zeus last, glorious thunderer.
 Zeus the beginning, Zeus the middle, and of Zeus all things are.
 Zeus was born male, Zeus became pure virgin spouse.
 Zeus is foundation both of earth and starry heaven.
 Zeus breath of all, Zeus force of unwearying fire.
 Zeus root of sea, Zeus both sun and moon.
 Zeus king, Zeus himself chief parent of all things.
 One power, one dæmon born, great prince of all,
 And one royal frame, whereby all things are encompassed.
 Fire and water, and earth and æther, night also and day.
 Both parent first in counsel and much-delighting love ;
 For in the vast body of Zeus do all things lie.
 Then by seeing his head and lovely features,
 Brilliant heaven, around whom golden hairs
 Of shining stars arise most lovely ;
 And on both sides two bulls’ horns of gold
 Both east and west, ways of the celestial gods.
 And for eyes, the sun and the moon opposite thereto.
 And for mind, unerring, royal, untainted æther.
 Around him all things move, and he deliberates, but there is no sound,
 No clamour, and no uproar ; not a single voice.
 The son of Zeus is not ignorant of the anger of Chronion,
 Even he who had his immortal beginning, and his mind,
 And his body dazzling bright, not to be pierced through nor injured.
 Robust, powerful, resistless, whomsoever he encounters.
 Shoulders and breast and back broad, as becomes a god.
 Air wide-prevailing, and far-reaching wings,
 With which he broods o’er all ; and he has a sacred bosom.
 And earth, mother of all, with lofty mountain-heights,
 And for mid zone the swelling of deep sounding sea,
 And remote ocean-bed, and the deep foundations of the land,
 And the broad plains of Tartarus, and utmost ways of earth.
 And having hidden things out into glad light again,
 Is about to offer from the heart most sacred gifts.
 Zeus, then, is all the world, life of the living, and god of gods.”

(Euseb., *Præp. Evang.*, iii. 9.)

If we turn to the religious system of Canaan or Phœnicia, as described by Sanchoniathon, we find that the Phœnician cosmogony closely resembles that of Chaldea and Egypt, while the mythology which follows is rather atheistic than polytheistic. It is preserved by Eusebius from Sanchoniathon, and I borrow Mr. Kenrick’s translation :—

"He supposes that the beginning of things was a dark and windy air, or a breeze of thick air, and a turbid chaos resembling Erebus, and that these were unbounded, and for a series of ages had no limit. But when the wind became enamoured of its own first principles, and an intimate union took place, that connexion was called Pothos, and this was the beginning of the creation of all things. And from this sprung all the seed of the creation, and the generation of the universe."

By a wonderful succession of developments, the universe grew into shape. The text is too tedious to be quoted at length. It tells of certain animals without sensation; then intelligent animals formed in the shape of an egg; then the sun, the moon, greater stars, lesser stars; then light, winds, clouds, torrents of waters. At length thunders and lightnings startled the intelligent animals into motion in earth and sea. At this point there is an allusion to the books of Taautus, Thot, or Hermes, showing that the whole fiction must have been made up out of Egyptian absurdities. Then come forth *men*, who worship the productions of the earth, and call them gods. Now the wind Colpias and his wife produced two mortal men, one of whom discovered food from trees. Their descendants worshipped the sun, and now began the generations of mankind. Long ages of silent mystery are supposed to follow, and tardy invention of but the rudest art. After all, partially-developed mankind began to bear some features of humanity. A man called Elyón, or *most high*, had a son called Heaven and a daughter called Earth, and after these the heaven and the earth received their names; but the most high father of the living Heaven and Earth lost his life in a combat with wild beasts, and was afterwards worshipped by the Phœnicians. To him, or to his name, I may presently refer. (See Kenrick's *Phœnicia*, p. 330.)

Meanwhile, seeing what Phœnicia, and perhaps Greece and Rome too, received from Egypt, and having been invited to expect that light from Egypt may be thrown upon truths first revealed in the Old Testament, and possibly on Christianity also, it may be well to know how far the sages of Egypt itself advanced upon the wisdom of their fathers in speculation on the being of a God; and thence we may judge how far they were at any time capable of enriching the mind of writers of Holy Scripture on the awfully sublime subject of the Divine Nature. Porphyry, a notorious assailant of Christianity in the third century, also assailed the superstition of Egypt, and Jamblicus, a clever Egyptian, resident in Syria, undertook to answer him. The parts of his work on mysteries which relate

directly to the gods furnish authentic information of the theology of Egypt, and is the more valuable as a very earnest apologist of that theology, he represents it under the most favourable aspect.

It would seem that he keeps monotheism out of sight until it is forced on him by the suggestions of his adversary. When treating on gods and spirits (sect. iv. chap. 1) he speaks of multitudes of gods, some more excellent than others; then on a sort of judicial spirits of a middle class, which make distinction between good and evil; and after these a third set of spirits, irrational and incapable of judgment; besides other spirits, utterly bad and pestilential. But he endeavours to justify their evil doings by a consideration that gods and spirits have a standard of justice very different from that of men (chap. 4). Some of the gods of Egypt govern matter, and others have power over spirit (chap. 14). Some are to be worshipped with the body, and others with the mind (chap. 16). Few men are wise enough to calculate their number (chap. 21); fewer still, if any, are capable of worshipping all the gods within the lifetime of a man (chap. 22). Certain things, or certain animals, are acceptable to certain gods, but man is acceptable to all of them, and everywhere he is a sacred object (chap. 24). Mistakes in sacrificing to the gods, so that to every one of them the animal peculiarly consecrated, and no other, be offered, are to be carefully avoided (chap. 25); and the same caution must be observed as to the prayers chosen for presentation to this or that god (chap. 26). Jamblicus confesses that the Egyptians are less careful than the Chaldeans to avoid confounding demons with gods, and that they not only address threatenings to demons, but presume to threaten the gods, not even excepting the great ones, Isis and Osiris (sec. v. chap. 7).

Passing beyond these generalities, on which I have touched very slightly, he endeavours to expound *the theology of the Egyptians* in a chapter on the god Ra, or the Sun, whom they believe to be the Ruler of the World. This chapter reads as follows:—

“Hear, then, according to the mind of the Egyptians, the intellectual interpretation of symbols; but dismiss from your imagination whatever you may hear as to the visible images of symbolic things, and fix your attention on the intellectual truth itself.

“CLAY, therefore, you must understand to be all that which is corporeal and material: either nutrition and generation, or whatever appearance of material nature, agitated with the changing flows of matter; or whatever contains

the stream of generation, and coincides therewith, or the primary and elemental cause of all powers and elements therein is comprehended in the word. And the cause which causes all such as this, all generation and all nature, and all the powers that are in all the elements, is God. Because He is indeed supereminent over these, immaterial, incorporeal, supernatural, unbegotten and indivisible, entire by Himself, and in Himself, He is before them all, and because, in Himself He comprehends them all, and from Himself distributes all things to the world, He appears again in them. Therefore, also, He is above them all, and is alone on high, and shines forth separate, free, sublime, and sails aloft by Himself over all the forces and the elements that are in the world, and by Himself bears witness to the following symbol : that *God sits above the lotus*.

"This figure signifies that supereminence of power which does not so much as touch the clay, but sets forth the intellectual and empyreal government. For He beholds in the lotus all that is circular in the form of the leaves, and in the appearance of the fruit, the energy which is indeed akin to the only movement of the revolving mind, that which is like these, and in like manner also, in one order and in one manner manifest. This God also rests within himself, and over all government and energy of this kind, he is venerable and holy. He dwells aloft and abides in Himself, which indeed the figure of sitting is chosen to signify.

"And when He is represented in pictures as *one who navigates a ship* (Ra in his boat) this represents the power of governing the world. So as the governor is separate from the ship, He himself being seated at the helm, He from above steers all things, and impels all by a brief movement of His own; so God was above from the first beginnings of nature, and imparted by Himself alone the first impulses of motion, and these things indeed, besides many others, are signified by the ship He steers" (sec. vii. cap. 2).

Now, this sounds to be very near the truth; but at length Jamblicus comes to the most important question of Porphyry:—

"What do the Egyptians believe to be THE FIRST CAUSE? τὸ πρῶτον αἴτιον. Is it mind, or something above mind? Is it alone, or with something else, or with some other things? And is it incorporeal or corporeal? And then; is it the same as the Creator, or was it before the Creator? And again; Do all things come from one or from many? And have they any knowledge of matter, or the first corporeal forms? And is matter produced or unproduced?" (sec. viii. cap. 1).

Jamblicus answers that on these points the ancients held various opinions, as do his own contemporaries, and Hermes (the Egyptian Thoth) is said to have written 20,000 books, or, according to Manetho, 36,525; but they left the matter unsettled, and every one is free to inquire for himself. However,

he proceeds to say what might seem, at first hearing, to almost agree with the statements of inspired prophets.

"Before the things that really exist, and before the beginning of them all, there is one God; before even the first god and king." This first god and king he has already said to be the sun, or in the sun. "He is immutable, abiding in the singleness of his own unity. For neither is anything intellectual, nor any other thing, to be confounded with him. He stands firm, pattern of the self-father, *αὐτοπάτωρ*, of the self-begotten and only-father God, who is truly good. For this is that which is greatest and first, the foundation of all things, and the root of intelligible ideas of existing beings. And from this one the self-sufficient god *shone forth upon himself*, *ἐαυτὸν ἐξέλαμψε*; wherefore he is his own father, and self-sufficient. So this is the beginning, and god of gods, *monad of that which is one*, *μὲνὰς ἐκ τοῦ ἑνὸς*, first existing and beginning of existence; for of him is the essentiality of essence; wherefore also he is hailed as the intellectual principle, *νοητάρχης*. Now these are the very oldest principles of all things, which Hermes places before the ethereal and empyreal gods, and them that are above the heavens" (sec. viii. chap. 2).

In this chapter there are forms of speech which recall passages in the Jewish and Christian theologians of Egypt in an early age; and we must remember that Jamblicus the Egyptian, living in the very centre of primitive Christendom, by education an Egyptian, by language a Grecian, resident in a land where true monotheism was known and upheld, and "the Most High God" worshipped from the days of Abraham and Melchizedek, and therefore fully cognizant of this truth, that there is but one God, is endeavouring to defend the gods of Egypt against the taunts of the most keen of sceptics, and borrows for this purpose the familiar terms of Greek philosophy, as they might be employed by a Philo or a Clement. It must also be noticed that, these few passages excepted, the shadow of Bible monotheism is exceedingly faint, and the verbal resemblances few, and very incidental, while the substance of Egyptian polytheism remains intact. There has not been a glimpse of real monotheism, so far as I can find, in the preceding sections of this elaborate apology, and that of the kind which has now been quoted is unsaid in the very next chapter, which I translate closely.

"But he," that is, the Egyptian god of wisdom, and author of many books, "presents another god, Hemeph, as leader of the celestial gods, whom he says to be the mind that understands itself, and converts the intelligences to itself, and before

this one he places *the one thing that is indivisible*, τὸ ἐν ἅμεις, and calls it *the first principle of magic*, μάγευμα, which he also names Eicton, wherein is first found that which understands and may be understood, and is worshipped in silence only. Besides these, other chiefs preside over the visible creation; but the creative mind and guardian of truth and wisdom is called Amon in the Egyptian language, and he that skilfully and truly makes everything perfect without failure is called Phtha" (sec. viii. chap. 3). Now, again, come other gods in full strength, making up the Egyptian pantheon, and bringing into full view the main fact that their monad, unity, first principle, self-begotten father, or whatever else, is but something in a stage of development from the primeval water, not yet complete, and in advance towards the divine multitude, consisting of gods, of whom each was imperfect, and for most of what one sufficient god would be capable, impotent alone. It could receive certain offerings, hear only some select prayers, and take its turn only for a part of what each worshipper would have to give, in the course of his devotions, to a larger crowd of gods than any man living could have lived long enough to worship all.

The twelve chief gods of Egypt must have been well known by name to Moses, and other writers of the Old Testament, but were only mentioned by them with the clearest expression of abhorrence as false gods. No resemblance of name, or attributes, or history, appears in any title, or mingles in any description of the true God; neither does any resemblance of Egyptian idolatry find place in the divinely-appointed ritual of Moses. Between the theogonies quoted in this paper and the divine revelation of Holy Scripture can be traced no resemblance, nor can any abatement of the most emphatic condemnation be detected. As to the religion of Egypt, as expounded by the latest original authority just quoted, I venture to think that it has characteristics undiscoverable in the *Book of the Dead*, having been introduced during the Ptolemaic period, when the Egyptian priests flattered the conquerors of Egypt by admitting them also into the number of their gods. Of this the Canopus inscription is a sufficient evidence.

I may remark further that there was always so utter an incongruity of the conceptions of heathenism with the truths of Revelation, that even the terms by which truth was originally conveyed in Holy Scripture lose their meaning when borrowed by the idolater. Take, for example, the title of Most High. It was used in the time of Abraham by the patriarch himself, and by the king-priest Melchizedek, to name the one true God, as is distinctly stated in the book of Genesis.

But the same term, *עֵלִי*, *ἑλιστος*, was found among the Phœnicians, as we learn from Sanchoniáthou; and it appears again in the Phœnician language, according to Plautus, where it is the proper word for a god, and *עֵלִיִּים* and *עֵלִיִּוֹת* mean gods and goddesses. It reappears in the common language of their successors in Gadara, according to the Gospel, and was used by the Macedonian girl possessed by an evil spirit, when she cried, "These men are the servants of the Most High God, who show unto us the way of salvation." From the lips of a heathen, the word was to signify a god, either true or false; but when used in Holy Scripture it never conveyed the false idea, and never implied what is impossible—an agreement between the temple of God and idols.

I therefore humbly, but confidently, maintain that holy men of old, who spake as they were moved by the Holy Ghost, never borrowed the myths of heathenism for the purpose of declaring the truths of God; neither to frame a ritual nor to construct a creed.

Let us now dwell on a few reasons to show that the monotheism of the Bible is so essentially different from the polytheism or pantheism described in the writings above quoted, that it could not possibly have been suggested by anything which they, or other writings like them, might contain.

From first to last, the writers of Holy Scripture were earnest and single-minded men. They were intent on the maintenance of great truths; chiefly, the existence, the universal sovereignty, and the omnipotence of One Eternal God. This truth underlies every statement, and pervades the text of all the sacred books. Here is the Creator of the Universe, existing before all worlds, such as no heathen ever heard of. Here is One God and Father of Heaven and Earth, Himself uncreate. None by searching could find Him out. His works are perfect like Himself, and so the only accredited revealer of His great creation-work has not to tell of some slowly-developed cosmogony, but marks each completed stage of the creation as His own unaided work. "He spake and it was done; He commanded, and it stood fast." Through the history of successive ages, however brief the notes may be, or however full the narrative of events, He is the ONE BEING, acknowledged Lord of all creatures. All prophets derive their authority from Him alone; all wise men pay their homage to Him alone. The Egyptian priests could indeed recite the names of many gods, and profess themselves ignorant of many more, but could not trace the best of any of them farther back than a dark and fathomless

abyss. Other priests had their own tales to tell, but all came to a similar origin of Godhead; conceived in the matrix of a mysterious confusion. They were generated spontaneously, or gradually developed from monads into animated creatures, and thence by slow processes into gods. Some were born of woman, and in due time deified. We cannot find a vestige of these fables in the authentic teachings of the Bible, whose authors never vacillate in ascribing peerless and incommunicable perfection to one God alone; while the heathen mythologies, in some passages grand, if not sublime, and boastfully elaborated, allot to their chief gods respectively, no more than small shares in the government of the world, some for good and some for evil.

The religions and customs of the great nations of antiquity before Moses were necessarily correspondent to their notions of these local and insufficient gods, but to concentrate all reverence and love on One was a sentiment unknown to them; so that allegiance was divided and wasted between gods many and lords many, and no man had a god whom he could love with all his heart. The enthusiasm of the polytheist who patronized many gods could not be transferred into the bosom of a man who adored one God, and protested against the very thought of having more than one. The divinities of Egypt and the East beyond the Flood were not only many, but their presence was more or less limited to the regions where they were worshipped. Their character was not entirely divine, for it was shared with men, and even their names were assumed by men. Between them and the pure Spirit known to Abraham and his children, infinitely above all human taint and imperfection, there could be no comparison. The features of the several religions were utterly unlike; their spirit and their language were foreign from the high conceptions of Divinity entertained by worshippers of the True God, and all their ideas were mutually incompatible. Compare, for example, the Hymn of Amen-Ra with the Prayer of Solomon at the dedication of the temple. Take the descent of Ishtar, and as many hymns, prayers, and incantations of Egypt and Assyria as you like, with charms of Chaldean magic, and lay them side by side with the book of Psalms. Consider how far the writings of the polytheists could be made use of to enrich the productions of servants of the One True God.

Yet much more difficult would it be to fix upon any one essential truth in the heathen writings, which could have been found there antecedently to its production in the Old Testament, or, perhaps, its reproduction by Moses, having been

revealed before him to his fathers. Words, and even sentences, may be collected that express generally-acknowledged verities, such as could not be abandoned by the general conscience of mankind, but our present question relates to fundamental truths of Divine Revelation, especially the existence of One Only God, which we have heard attributed to a Chaldean sect. On this truth depends all that is distinctive in Christian doctrine as compared with the various religions of the world.

There is an indestructible unity in the moral teaching of the Bible, which would be fatally impaired by the introduction of any extraneous element, whether the product of a foreign system, or the adaptation of an originally foreign institution. That there is one mind prevailing in the Bible must be acknowledged by every careful student; and is, in fact, presupposed by those disputants who appeal to the Sacred text for the confirmation, even of mutually destructive propositions. There is evidence of one ruling mind in the consistency of laws laid down in successive ages for the government of human society, as also in the consent of counsel given for the right application of these laws. The rules of conduct, both towards God and men, first delivered to Adam, then to the Patriarchs, and then embodied in that imperishable monument of Divine wisdom and justice, the Decalogue, attest the same unity of origin, and may be distinguished in each particular from the false worship and licentious customs of the peoples who, at the time of the Exode, retained the oldest traditions and mythologies; namely, the Egyptians, Assyrians, and Canaanites. We recognize the same unchanging principle and purpose in the constant application of the primitive laws—laws of the God who says: "I the Lord change not." We have again the evidence of History that the ever-advancing standard of Morality, raised and maintained, as by one persistent purpose, is apparent in the Mosaic Institutions, as to Peace and War; Servitude, as distinct from Slavery, the protection of Life and Property; the provisions of the Law of Moses having opened the way for the eventual establishment of the kingdom of Righteousness and Peace so clearly predicted by the Prophets. The original Institution of Marriage at the creation, "as it was at the beginning," an institution which men had abused in licentiousness and in hardness of heart, was restored at last by the Author of Christianity Himself, for the sanctification of domestic life, and the renovation of the world; so fulfilling the original intention. The active presence of one sovereign mind is further shown by the gradual wasting away of polytheism in the world; not by its

own weakness, for some systems of polytheism have been so organized and sustained as to have immense power,—but by means of the succession of writers who complete the code of revealed and divinely-authorized truths contained in the Bible, wherein was first revealed the pure and perfect monotheism of which we speak, and which we all believe.

Such a succession of sacred writers is not to be found in any other great religious system of the world, because none of them was ever under the same unchanging guidance.

All the polytheisms of high antiquity, or very nearly all, have been wrecked, or are visibly in process of decay; but many fragments of their teaching are now recovered, and if it be supposed that the sacred writers were indebted for any of their knowledge of fundamental truth to what was written or described by their teachers, in marble, clay, or papyrus, or if the forms of worship or institutions of society now known as Christian, originated in their mythologies or legends, now is the time for such origination to be proved, or, at least, shown to be probable. There is material enough at hand, and learning enough, and critical power enough, to examine this question with the thoroughness it requires. One immediate benefit resulting from such examination will, doubtless, be the advancement of sound Biblical science; for which, also, we have material and means enough, and the Oriental archaeologists will be, as they are already, our most valued helpers.

But there are a few words to be said before the conclusion of this paper, on two points:—

1. That the principle of *oneness* in relation to God, the only object of universal worship, and the same from everlasting to everlasting, appears in the one hope, with regard to the future condition of all mankind, that is manifest in the sacred writers. They all have one object constantly in view. To illustrate this would require no inconsiderable tractate, which is not necessary here. We are historically certain that Moses expected that one like himself would, in course of time, arise, to whom men would hearken. It is generally believed that the New Testament is inseparably related to the Old, and has yet to be the instrument of a glorious renovation of the world. We know not that polytheism, or its consequent pantheism, ever had such hope. But we do know that the idols once in their temples have perished; or, if a few remain, it is only to be exhibited as trophies of the Christian conquest. If, however, we are debtors to the inventions of the old mythologists for any portions of our Bible, we should render them some correspondent honour; but we cannot discover any

such association of that which is perishable with that which is eternal.

2. Every one of the sacred writers had a mission, express or understood, to take his part in working the ultimate abolition of idolatry, or polytheism, with all its vanity, falsehood, licentiousness, and cruelty. Every provision of the Mosaic Ritual and Civil Law was so framed as to be counteractive of the teaching and practices of idolatry. The entire economy of the Hebrew State and the order of domestic life were characterized by constant separation from polytheists. The *ḥay* wall of separation in the Temple, like the wall of separation in the Eastern city, the distinction of meats, and other regulations tending to the same end, kept the worshippers of One God separate from the devotees of many, and was a perpetual restraint upon themselves, and test of their fidelity to God. At last, it became a signal, also, of intolerance; but in many lands it had its use, and still has it; and he who, in this view, reads how severely Jeremiah, Ezekiel, Daniel, and the post-captivity prophets set themselves against even the least appearance of conformity to the worship or bare acknowledgment of other gods, and avoidance of the ways of their worshippers, cannot but feel at once the extreme improbability that they and their brethren and fathers would have stooped to borrow or mature their doctrines, or to adorn their worship with aught that polytheism could offer.

But still, if it be thought that the alloy of paganism anywhere mingles with the gold of Revelation, let him point it out who can, and no pains will be spared in applying the fit criterion.

The CHAIRMAN (J. E. Howard, F.R.S.).—I have now to convey the thanks of the meeting for this interesting paper; there is a great deal in it with which I am in perfect accord. I, however, almost fear that the writer has not fully grasped the question of the fading away of the primitive knowledge of a loving and true God, and of this knowledge having been superseded by idolatry. In order to prove that Moses and the writers of Scripture are in no way indebted to the Pantheists for any portion of their truth, he goes farther than was necessary, in stating what he supposed to be the entire absence of all knowledge of the one God among those who were other than the chosen nation. I would take, as the first instance of this, the title of *El Elioun*, the Most High God, to whom Dr. Rule has alluded in pages 356 and 357. He says, "Take, for example, the title of Most High. It was used in the time of Abraham by the patriarch himself, and by the king-priest Melchizedek, to name the one true God." Dr. Rule, I suppose, does not consider Melchizedek to have been an idolater, I take it for

granted that he has no thought of that kind ; but neither was he one of the chosen people. We are told in Scripture very distinctly what he was ; and he uses the term which we know, from other sources, was the name of God in Phœnicia. Abraham and Melchizedek unite in the worship of the one true God, and yet His name is not the name commonly used in the Bible for God, but it is a Phœnician name ; and I think we must suppose that the knowledge of this one true God had prevailed downwards from the beginning in that country in which Melchizedek, the king of Salem, was found worshipping as an acceptable worshipper. The word El for God seems to have been in use before the Flood, as is seen in the composite name Mahalale-el. If I mistake not, the recently discovered Assyrian inscriptions show that the original and far more ancient worship was the worship of the Father. The Al Fader of the Teutonic nations carries us back to the same thought which elsewhere prevailed, as I have shown with regard to the universal Father. Dr. Gutzlaff, than whom no one knew more of Chinese literature, the Chinese people, and their doings and ways, told me that though the goddess of the sailors was originally the Queen of Heaven, yet whenever the Chinese sailors got into any great straits or difficulty they called on the old Father, looking upwards and recalling to their minds a tradition which has not yet faded away, even in that country, of the universal Father of mankind. (Hear, hear.) We have, I think, traces of this primitive knowledge of the Father, combining itself with the Pantheism of Egypt, in the very curious way that has been partially shown in this paper. The epithets "True and Living God," and "The Creator," are given to the various subordinate deities ; but then, this is a part of the inconsistency that prevails everywhere, as well in the Pantheism of Egypt as in the idolatry of other nations. The God who is in this paper called Tum, is the setting sun, and I do not think that this name can be identified with תַּמְרָי, the deep. There is no connection between the deep or the abyss in the book of Genesis and the *Tum* of Egypt. The creation of the gods from the abyss is part of the rubbish that any one who takes the trouble to study these ancient cosmogonies will have enough of ; but before all these creations of the gods, and independently of them, we find the idea of the "supreme God the first and only principle from which the other gods were derived," who was called *Ilon*, or in Accadian *Dingira*, whose name signifies the God *par excellence*. Babylon owed to him its name of Bab-ilon ; in Accadian Kā Dingira (the gate of God).* Below *Ilon* comes in *Bel*, the Demiurge, the ruler of the organized universe, something like that which is expressed in what has been alluded to from the Hermetic creed, as a second mind proceeding from the First, arranging all things according to perfect order and perfect development. It is a very wonderful thought, when we compare it with what we ourselves know from the Bible.

* This is from M. Lenormant's very complete analysis of the subject.

This you certainly find in the Egyptian, and, I think, in the Indian cosmogonies. I must apologise for making these remarks ; but I could hardly do otherwise than state how far I agreed, and how far I did not fully agree with the paper read by Dr. Rule. I hope I shall be succeeded by some one who will be able to do fuller justice to the subject, but I would just say, before sitting down, with regard to the *Lahma* which is alluded to here as one of the gods, or *Lakh-mu*, explained by Mr. Boscawen as meaning "light," that *Lakh-mu* was so called originally, just as in Genesis God says, "Let there be light, and light was." So we find it stated on the 4th page of this paper, "Out of Mummū came *Lahma*" (force or growth). According to Mr. Boscawen this latter word means "light"—it means that light penetrated into the abyss, and that great results followed. Every one knows that in the Egyptian mysteries there was always a hidden or esoteric meaning, known only to the priests ; and an outward or exoteric meaning, which was propounded to the common people. This I take to be what was meant by the Apostle Paul, when he teaches that they held down the knowledge of God that they had, and prevented it from having its right effect, either on themselves or those they had under their teaching. I came here not having the expectation of taking the Chair ; and, as I am obliged to retire now, I will ask Mr. Cadman Jones to take my place, feeling assured that he will fill it better than I can.

Mr. H. CADMAN JONES then took the Chair.

The HONORARY SECRETARY stated that it was held by Canon F. C. Cook "that distinct traces of primeval monotheism are found in Egypt, and that the confusion with mystical legends began early and continually increased."

Bishop CLAUGHTON.—I rise with great diffidence, after having listened to the very interesting paper that has just been read, to make a few remarks. It would be impossible at this hour of the evening, and in a meeting of this kind, to go fully into this question, nor do I feel competent or able to do so ; but at the same time I think that the subject of this paper is one of the very deepest interest, and I will venture to make a few observations. I must say that I think the writer of this paper has made out his case, and that, so far as his reasoning has gone—and he has told us that he could not go further into so wide a field—he has quite proved that the monotheism of the Holy Scriptures is not in any way depending on, or derived from, any of the other systems of which he has given us an outline. (Hear, hear.) But there is one very striking thought that must occur to most of us when we come to consider those very confused, I will not say historical, but conjectural, systems of theology, and it is this :—When man has lost his knowledge of the true God, he has always, either in his ignorance or false learning, tried in some way to recover it. The untaught savage has a firm belief in a Father—a good spirit, and, also, in an evil spirit ; and the sages and priests of Egypt and Phœnicia, as well as others of those who propounded those very ancient systems of which we have heard to-night, held theories that were widely distinct from the simple

guesses of the savage. They had an elaborately constructed system of theogony, answering to what the New Testament calls the "genealogies," of which the Apostle speaks (1 Tim. i. 4). But I am more familiar with some of the further Eastern systems—those of the Hindoos and the Buddhists; and there is also another system, that of the Mahomedans, to which I may refer. The Hindoo system is a perpetual genealogy of false gods, tainted much more by the corruption of what is entirely human and carnal than almost any other; in short, the very history of their gods is, in fact, the history of evil. Now, I maintain that there always was outside the chosen people a tradition of a belief in the true God. There is always some witness to the true God in some part of the world besides those who are to be found in God's own Church, and one great blessing in the end will be that all these followers of the belief in the true God will be gathered up into God's own family and brought to the true knowledge of Him, just as many of our Christian brethren, separated from us by many of the barriers of error and prejudice, will become—as indeed they now are, but more surely and really—our Christian brethren. But there are some especially who have raised up in those far-away portions of the world a protest against those elaborate systems of Polytheism, one of which is Buddhism and another Mahomedanism. Let us take, for example, Buddhism. I firmly believe, although it is not one of those things that are brought before us by the learned writers on the subject, that the simple history of Buddhism was the result of the effort made by one superior and comparatively pure-minded man—sincere, if fanatical—to attain the Truth and free himself from all these elaborate systems of Polytheism. He took, alas, a most mistaken line in endeavouring to do this. First of all, he preached Atheism, which by degrees became Pantheism; but as the founder of Buddhism, what he taught was Atheism. I do not believe he meant to say, "There is no God." I believe his meaning was that there were not these many gods, that there was no truth in what the people had heard of the family of gods—gods of evil men. He taught his false and mistaken principle that men, by their own inherent goodness, if they would only conquer their bodies and lower natures, might become first, better, then good, holy, and divine. That was, I think, the simple foundation of Buddhism; and its author failed, for several reasons. I will not enter into the history of Buddhism, which is not a system of idolatry, but I will pass on to Mahomedanism. If the founder of that system had not been an ambitious man, and I may say a carnal-minded man, although, undoubtedly, he had a great deal of wonderful power in him, he would have been more successful and more like the founder of Buddhism. He made a protest against two false systems—Polytheism and Idolatry, and although he put it on a false basis and carried it by the sword, his was a successful protest against Idolatry and Polytheism; and I believe that at this moment, if the followers of Mahomet could be induced to go back to the point from which he went wrong, they might be more easily brought to a true knowledge of Christ than

any other race in the world. I would put the morality of the Buddhist teaching next to that of the Christian doctrine ; but I cannot speak, I am sorry to say, in the same terms of the Mahommedan system ; there is no doubt, however, that it was intended to be a protest against Polytheism and Idolatry. Why did Buddhism fail? Just because man cannot of himself become wholly good. He is a fallen creature, and in order to become good he must go to the Source of all goodness. We know that we have in our blessed Saviour the source of an inspiration of goodness, and we can recover from Him that which we have lost. Well, the reason why the morality of the Buddhist nations is not successful is, that their system is inconsistent with true religion as the basis of morality. If you take Mahommedanism, you find that it is widely at variance with true morality. Do not misunderstand me. I do not wish you to suppose that there is nothing good and true in Mahommedanism, and that the Mahommedans have not great virtues and high qualities, but these are all marred and blurred by that which drags them down ; namely, first of all, the fact of their being linked to a gross imposture, and next, the false and carnal morality, or rather immorality, which is mixed up with the religious system itself. Now, we as Christians inherit the learning and faith that have come to us from the very highest and first source ; we do not borrow, and have not borrowed in the least, from those other systems of which we have heard in the Paper read to-night. Our monotheism, our belief in one great God and Father and Creator, comes to us as our first fathers knew it ; and it has been handed down to us unimpaired, although often lost to the great part of mankind. Still it did come to us, and if it came in no other way, God preserved it among His own chosen people, who were selected as the repositories of His truth, until Christ came, as the True Light of the world, and we now are the inheritors of that great light. I do not think there would be much edification in going very deeply into these questions. I would not deny the usefulness of those antiquarians who take us into these things, nor the gratitude we owe them, but there is this difficulty, that in going into these matters of the far past we may be so easily mistaken ; and I must say for myself that I cannot follow them with the zest I should like to feel in these interesting, but sometimes not very edifying, paths of history, or rather of conjecture. Still, I think we are much indebted to those who prepare for us papers such as that which we have heard to-night, and who thus create an interest in this sort of investigation. I am afraid I have not contributed much in the way of throwing light on the subject of this evening, but I must thank you for the kindness with which you have listened to me. (Hear, hear.)

Rev. Principal J. H. Rice, D.D.—I could have wished that my excellent and learned friend Dr. Rule had not been quite so strict in his adherence to his own particular object. He has set the example of not indulging even in an introduction to his subject, and I think that that is one reason why the subject itself is liable to be more or less misunderstood. I do not under-

stand that Dr. Rule means to throw any doubt on the fact of the primeval unity of patriarchal faith and theology; there are two or three phrases to be found on looking carefully through the paper which seem to imply the contrary—that Dr. Rule holds to that unity of primeval patriarchal faith and theology; but it was no part of his object to dwell upon this, but rather to deal with the particular proposition which he desired to prove. I suppose that Dr. Rule not only has read, but that among the learned company he keeps he meets with those who are in the habit very quietly and easily of assuming, that whatever there is of wisdom in the writings of Moses was borrowed from Egypt, and that whatever there is of grandeur and nobleness in the conceptions of the Bible was most probably obtained by means of some man, or men, of grand and powerful genius, by whom the great ideas of other nations were taken and moulded into a system, and that thus we have in the writings of the Old Testament the results of an inspiration gathered from various origins round about—partly from Chaldea, with which, of course, the Jews in their earlier history were very closely connected, partly from Phœnicia, and partly from Egypt, and that lying, as the Hebrew race did, in the centre of those other races—Chaldean and Phœnician and Egyptian—they thus gathered into a focus the rays of nobleness, and grandeur, and impressive speculation with regard to the existence of a God and the creation of the world, and that this is the natural history of the Books of Moses and of the foundations of our religion. Now, I suppose that Dr. Rule has met with all this sort of thing, and, finding it current in society, he has undertaken to prove, on the other hand, that these ancient books do not owe anything to the sources which are supposed to have contributed all that is precious, all that is glorious, in them. (Hear, hear.) That I take to be the proposition which Dr. Rule has undertaken to establish. I agree with a good deal that our former Chairman said in regard to the primitive truth that is found mixed up in various forms of religion. I think that no one can have examined the earliest writings of the Hindoos without finding that it was a very different system which prevailed among the Aryan fathers of the Hindoo race, from that fearful and monstrous growth of tales of pollution and absurdity to which Bishop Claughton has made reference. I think, if we refer to that sister branch of the great Aryan family from which the Parsee worship is derived, and to the relics and indications of their most ancient form of worship, from which the comparatively modern Zoroastrianism is a derivative, we shall see that there has been a sort of unity between the Persian principles and faith and the Hindoo principles and faith, and that both may be traced up to the same cradle and the same age. Nor do I doubt that there has been a sort of identity between them and the earliest originals of the Egyptian faith; but what I understand Dr. Rule to say is, that that being so, all that is good and pure in the old faiths, coming as it did from one heavenly original, has been perverted and corrupted by the various forms of heathenism; that the different families of heathenism invented for themselves a human cosmo-

gony and a heathen mythology ; that they laid hold of whatever was pure and noble, and turned and perverted it into conceptions that have nothing in common with a pure and high theology such as we find enshrined in the books of the Old Testament ; that, in fact, a direct line of derivation for all that is true and pure in these systems is to be traced to the Divine revelations, which are presupposed by, or contained in, the writings of the Old Testament Scriptures, instead of these systems being the originals from which the sublimity of the Old Testament, as certain parties pretend, is derived. (Hear, hear.) I think that this is something like his general argument, and it is not unimportant that we should consider these matters ; indeed, I think I might venture to say to the right reverend gentleman who has spoken, that these things are not matters of indifference, that they are matters practically bearing on the faith of the people day by day. I imagine that my friend Dr. Rule would hardly have been at the trouble of writing this paper if he had not found clear evidence that it is a difficulty in gaining the allegiance of a certain set of students of ancient history, mythology, theology, and cosmogony, that they can and do assume, and take it as fully granted, that the Scriptures are mere derivatives from other sources. (Hear, hear.) Therefore, I think that Dr. Rule has been dealing with a practical evil in demonstrating that it is impossible that the statements of the Scripture could have been derived from those other sources to which reference has been made. Possible it is that the divine truths presupposed in earlier books of the Scriptures may have been perverted and degraded by the later mythologies and cosmogonies ; possible enough is it that these false systems may have played havoc with everything that was true and good, but it is not possible that the real original truth itself should have been gathered by a strange system of derivation and a gradual method of purification and analysis from those other sources. (Hear, hear.) I have been reminded, in reading and hearing this paper, of what I have always felt to be one of the great evidences of the truth of the Old Testament, and that is, that they are so entirely separate, so altogether in contrast with all the systems of mythology that have prevailed in the world. There was a time in my life when I gave a good deal of attention to these studies, and I then came to something like this conclusion—that a man left to the mere efforts and struggles of his own unaided reason when endeavouring to grapple with the problem of existence would never be led to the real and grand solution which we hold, namely that there is a personal God. (Hear, hear.) I believe that in order really to attain to that sublime, that wonderful truth, revelation was necessary. (Hear, hear.) As a matter of fact we do find that in any such mental struggle men are continually led to suggest such poor pitiful attempts at a solution of the problem as those we have had a sample of to-night. We find that the metaphysicians of to-day, when they refuse to accept the teachings of revelation on this subject, are very much in the same

condition as the mythologists of Greece and Rome, and, before their day, the mythologists of Egypt and Chaldea. We find that where they will not accept the doctrine of a personal Deity, they go back to an inscrutable power—they do not tell you what it is, but they say it is not personal, and they cannot attribute personality to it. They go back to fate and tendencies, to eternal somethings, not ourselves, which make for righteousness, and we know not what besides, because they will not admit a personal Deity. If we study the matter, we shall find nothing more intelligible in their various ideas on the subject than there is in the strange, sad, grotesque, but yet pathetic attempts of those old heathen thinkers to grapple with and solve the mystery of the universe. (Hear, hear.) I must add that when I look at the Jewish people and think of them as they were, with no greater advantages in many respects than others, and often even with less, and when I see that along their line the wonderful, the pure, the lofty, the consistent, the steadfast conception of a personal Deity, unalloyed, with no base mixture of mean and low anthropomorphism about it, but, whatever there was of it sublime, elevated, purified, and ennobled in a way absolutely divine,—I say, when I remember all this, it seems to me to be one of the strongest evidences of the fact and the truth of Divine revelation that could possibly be afforded, and a strong argument for our retaining our faith in the full and complete authority of the sacred Scriptures. (Cheers.)

Rev. J. FISHER, D.D.—I think that the writer of this paper has fully and clearly made out and established the point with which he started. I think he has made out very clearly that the monotheism of the Bible is not derived from the Egyptian mythology, nor from the Phœnician, Assyrian, or Chaldean systems, for they had no monotheism to give. I say that no twelve honest men would leave the jury-box after hearing the case Dr. Rule has put, till they had brought in a verdict in favour of the paper he has read and the truth it establishes. It was not necessary for the writer of the paper to go back to the antediluvian period. I do not agree with him that the worship of God ceased with the death of Abel, because in that case the Church would have ceased, and I think it did not. We have a great revival about the period of the birth of Seth, when men began to call on the name of the Lord; and taking it onward from the time of Noah, who, with his sons, were monotheists, it was carried forward through long ages. I think the founders and fathers of the systems of the early Egyptians and Phœnicians, and Chaldeans and Assyrians were monotheists; and I believe that the oldest work of magnificence in the world, the Great Pyramid, was built by monotheists. There is no trace of idolatry on it, and it is supposed by those who have examined it most closely that it was built by monotheists. We find at the time of Abraham a great spread of monotheism; then we come to Job, who knew the true God, and when Joseph went to Egypt there was a remnant of monotheism there. The further we go back into the history of the nations, the nearer we find them to monotheism. There are traces of it in the old Vedas, and there is the same thing in the Egyptian mythology.

I think that Dr. Rule has proved his point fully and completely, and that Moses did not borrow his monotheism.

Dr. RULE.—I will not consume a minute in what I have to say. In page 2 of my paper I instance the tradition which Mr. Howard supposed I had forgotten. I avoided most distinctly all that I might have said about Persia and so forth, because I wished to confine my observations to the point with which my paper deals. I also avoided speculations as to traditions and words which I conceive to be utterly useless and idle, and because there is no end to these speculations, and things without an end are exceedingly unpleasant. I have now only to thank you for the courtesy with which you have listened to me.

The meeting was then adjourned.

INTERMEDIATE MEETING, MARCH 18, 1878.

H. CADMAN JONES, ESQ., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Election was announced :—

ASSOCIATE :—S. A. Ram, Esq., London.

Also the presentation of the following Works for the Library :—

"Proceedings of the Royal Institution."	Part 67.	<i>From the Institution.</i>
"Denudation."	By G. Race, Esq.	<i>From the Author.</i>
Two Pamphlets.	By the Rev. Dr. Sexton.	<i>Ditto.</i>

A Paper, entitled "Was the Name of Jehovah known to all Shemetic Nations?" was then read by the Rev. Professor Swainson, D.D. A discussion ensued, in which the following took part :—Rev. J. Fisher, D.D., T. Tyler, Esq., Rev. T. M. Gorman, Rev. W. Baker, and W. St. Chad Boscawen, Esq. The Author having replied,

The Meeting was then adjourned.

MEETING, APRIL 15, 1878.*

H. CADMAN JONES, ESQ., M.A., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

MEMBER :—The Right Rev. T. A. Jaggar, D.D., Bishop of South Ohio, United States.

ASSOCIATES :—The Right Rev. Bishop B. B. Smith, D.D., LL.D., Bishop of Kentucky, Presiding Bishop of the United States Episcopal Church ; the Right Rev. Bishop H. C. Lay, D.D., Bishop of Easton, Maryland ; Rev. D. M. Berry, M.A., London ; Rev. F. C. Cook, M.A., Canon and Prebend of Exeter ; Rev. H. D. Thomas, Westminster ; Rev. J. T. Willis, B.A., Rhosmarket, Milford Haven.

Also the presentation of the following Works for the Library :—

“Proceedings of the Royal Geographical Society.” Part 2 for year.

From the Society.

“The History of Protestantism.” By Rev. Dr. Wyley. *From L. Biden, Esq.*

“Christ the Lord.” By T. Tyler.

From the Author.

A Paper by Bishop Smith (United States).

Ditto.

A Paper, entitled “On the Formation of Valleys,” by Mr. G. Race, was then read by Mr. C. McKechnie, in the author’s unavoidable absence. A discussion ensued (prefaced by the reading of a communication on the Paper by Mr. T. Sopwith, F.R.S.), in which the following took part :—Mr. S. R. Pattison, F.G.S., Sir J. Fayrer, K.C.S.I., F.R.S., Mr. W. R. Dibdin, Rev. J. Fisher, D.D., and Mr. J. Thornhill Harrison, M. Inst. C.E., &c.

The Meeting was then adjourned.

* Intermediate ; for meeting of 1st April see Vol. XIII.

ORDINARY MEETING, MAY 6, 1878.

J. E. HOWARD, Esq., F.R.S., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed, and the following Elections were announced :—

MEMBERS :—The Right Rev. H. Cheetham, D.D., Bishop of Sierra Leone ;
the Right Rev. J. R. Holly, D.D., Bishop of Haïti ; A. Duff Watson,
Esq., Sldmouth.

ASSOCIATES :—The Right Rev. J. Mitchinson, D.D., Bishop of Barbados ;
the Right Rev. C. T. Quintard, D.D., Bishop of Tennessee.

Also the presentation of the following Works for the Library :—

"Proceedings of the Royal Society," Part 186.	<i>From the Society.</i>
"Annual Address of the American Geographical Society" for 1878	<i>Ditto.</i>
"The Philosophy of Man." By J. Coutts, Esq.	<i>From the Author.</i>
"Some Sceptical Doubts." By Rev. C. Bullock, B.D.	<i>Ditto.</i>

The following paper was then read by the author :—

**THE JORDAN VALLEY, IN THE LIGHT OF BIB-
LICAL HISTORY AND SCIENTIFIC RESEARCH.**
By Professor J. L. PORTER, D.D., LL.D.

DOWN the centre of Syria, Palestine, and Arabia Petræa, runs a great valley from north to south, through six and a half degrees of latitude. At its northern end, on the shore of the Mediterranean, lie the ruins of Seleucia, where St. Paul embarked on his first missionary journey (Acts xiii. 4); and at its southern end, on the Gulf of Akabah, are the ruins of Ezion-geber, where Solomon built his fleet for Ophir (1 Kings ix. 26). The northern section of the valley forms the bed of the river Orontes, near whose banks once stood the great cities of Antioch, Apamea, Hamath, Emesa, Riblah, and Baalbek. The southern section is an arid desert, shut in on the east by the red cliffs of Edom, and on the west by the white calcareous ridges of the "Wilderness of Wandering." Both these sections are of much interest to the classical and sacred geographer. East of the Orontes, between the parallels of Hamath and Aleppo, is a wide region of plain and mountain, studded with remarkable old towns and villages, to the existence of which I was among the first to call attention when

I visited Palmyra more than twenty years ago.* A portion of this interesting region was explored by the late Mr. Tyrwhitt Drake, and also by the Count de Vogué, who has given some beautiful drawings of its ruined churches and houses in his splendid work, *Syrie Centrale*.

2. At present, however, I wish to treat of the central section only of the great Syrian valley. It is more deeply interesting than either of the others, and it presents most important problems to the historian and the physical geographer, problems which have never yet been satisfactorily solved, and which, I believe, are not unworthy of notice in a meeting of the Victoria Institute. This section forms the bed of the river Jordan and the Dead Sea, and is in many respects unique. For a length of about 150 miles it is below the level of the ocean, and along the shores of the Dead Sea its surface has a depression of no less than 1,290 feet. It would seem that the name *Jordan* was intended to denote this remarkable physical characteristic. It signifies "the descender," and is most applicable, whether we consider the rapidity of the current, or the depth of the valley through which it runs. From whatever part of the country its banks are approached, the descent is long and steep. That this is the true etymology of the name appears highly probable from an incidental remark in Joshua iii. 16, where, in describing the effects of the opening of a passage for the Israelites, the word used for the "coming down" of the waters is radically the same as the name of the river. Such a play upon a name is common in Hebrew.

3. The snows that cover Hermon during the winter, and that still cap its glittering summit during the hottest days of summer, are the real sources of the Jordan. They feed its perennial fountains; and they supply, through a thousand channels, those superabundant waters which make the river "overflow all his banks all the time of harvest" (Josh. iii. 15). But it has two historical sources, one on a terrace of Hermon, at the foot of a cliff, beside the ruins of Cæsarea-Philippi, most probably the place where our Lord uttered those well-known words which have given rise to so much controversy—"Thou art Peter, and upon this rock I will build my Church, and the gates of hell shall not prevail against it" (Matt. xvi. 18). Perhaps, as Dean Stanley observes, the very rock impending over the fountain, and on which a temple of Pan stood, may have suggested the metaphor. The other fountain is four miles distant in the valley. There is here a cup-shaped mound,

* *Five Years in Damascus*, i. 197.

300 yards in diameter, now called *Tell el-Kady*, "The hill of the Judge." It is the site of the primeval Phœnician city *Laish*, which the Danites captured and "called after the name of their father" (Judg. xviii. 27—29). It is interesting to note that *Dan* in Hebrew has the same meaning as *Kady* in Arabic,—“Judge”; so that *Tell el-Kady* might be rendered in Biblical phraseology “the mound of Dan.” The site is now desolate, and covered with a dense jungle of thorns and thistles, emblems of the curse pronounced upon all the high places of Palestine which the Jews had polluted by idol-worship (Ezek. vi. 3, 4; Isa. xxxiv. 13). There, at first, the Danites set up the graven image which they took from Micah, and there, nearly 500 years later, Jeroboam set up one of his golden calves (Judg. xviii. 30; 1 Kings xii. 29).

4. The streams from Dan and Cæsarea-Philippi unite about four miles south of the former, and flow through a marshy plain into a little triangular-shaped lake called *Hûleh* by the Arabs. The name is evidently a corruption of the *Oulatha* of Josephus (*Ant.*, xv. 10, 3). The lake is the Merom of the Bible, near which Joshua gained one of his greatest victories over the Canaanites (Josh. xi. 5); and somewhere close to its western shore we must look for the site of the long-lost Hazor, the capital and stronghold of the Canaanites in northern Palestine. When travelling through this district in 1874 I observed a large scarped mound, like a citadel, with traces of ancient ruins upon and around it, and the small village of Waggas near it. It lies on the lowlands, about four miles south-west of the lake, and it may probably be the site of Hazor. That city could scarcely have stood, as some suppose, on the top of the mountain-ridge to the west, for Jabin, king of Hazor in Joshua's time, and his successor Jabin in the days of Barak, had large forces of chariots, which could not have been used among the rugged mountains (Josh. xi. 6—10; Judges iv. 2, *seq.*).

5. Soon after emerging from the lake the Jordan is spanned by *Jisr Benât-Yakûb*, “the bridge of Jacob's daughters,” over which runs the ancient caravan road that once connected Egypt and Western Palestine with Damascus. Below the bridge the river enters a wild ravine, down which it rushes in a series of foaming rapids to the Sea of Galilee, falling about 700 feet in eight miles.

THE SEA OF GALILEE.

6. The Sea of Galilee is egg-shaped, about twelve miles long by eight wide. The great depression, and the general contour of the cavity in which it lies, give it the appearance of a

huge crater. The range of hills along its western shore, from the plain of Gennesaret southward, is basalt; and nearly the whole of the high table-land of Bashan, the side of which rises abruptly to a height of 2,600 feet above the eastern shore, is of the same geological formation. The basin of the lake has evidently been from a very remote period the centre of volcanic action, and perhaps owes its origin to some terrible eruption in prehistoric times. It is still frequently visited by earthquakes; and the shattered walls and houses of Tiberias bear witness to their desolating effects.

7. A mile south of Tiberias, close to the lake, are the warm springs and baths of Hammath, which gave a name to an ancient town of Naphtali (Josh. xix. 35). The name signifies "warm baths." They were well known in Roman times, being mentioned by both Josephus and Pliny. The water issues from the base of a cliff of *trap* rock, and has a temperature of 144° Fahr.; its taste is extremely salt and bitter, and it emits a strong odour of sulphur.

8. On the east side of the Jordan valley, three miles from the southern end of the lake, are the still more famous baths of *Amatha*, probably a corruption of the Hebrew word *hammath*. There are seven or eight springs, surrounded by Roman ruins, situated in the bottom of the deep wild ravine of the river Hieromax, one of the largest tributaries to the Jordan. The temperature of the water is 107° Fahr.; and in Roman times the baths were, in healing virtue, ranked next to those of Baïæ.

9. As the Sea of Galilee thus manifestly occupies a volcanic basin, and as its surface has a depression of 653 ft., it would be interesting to know, from thorough scientific research, whether the present formation of the basin, and the depression of the lake, are coeval with the general geological structure of the surrounding country, or whether there are any evidences that the basin was formed or deepened by more recent convulsions. The hills on the east have a uniform elevation above the lake of about 2,600 ft., and those on the west about 1,600; and behind each range is an expanse of table-land. A careful examination of the torrent-beds which fall into the lake would solve the problem. If the basin and the present level of the water be coeval with the table-land around, then the torrent-beds will have a gradual and regular descent to the lake; but, on the other hand, if the surface of the lake stood formerly at a higher level, and if it was depressed by a sudden convulsion, then an abrupt break will be found, as a rule, in the ravines, and a corresponding shore-line may be traced along the hill-sides. So far as I know, no minute

geological survey of the environs of the Sea of Galilee has yet been made.

THE VALLEY SOUTH OF THE SEA OF GALILEE.

10. The general geological structure of the Jordan valley, south of the Sea of Galilee, is evidently of the same age as the basin of the lake, or at least the upper part of the basin. The valley, however, presents some singular features. Its surface is mostly flat, varying from three to nine miles in breadth, and running along the steep mountain-ridges on each side, almost like a shore-line. Its bed is composed, so far as I could discover, of a thick alluvial deposit, covering for the most part very soft and recent horizontal calcareous strata. The present coating of the valley, therefore, is of a much more recent formation than its rocky sides and the mountain-chains adjoining; and it would seem to have been deposited, during a long succession of ages, at the bottom of a lake, in the same way that deposits are being at present formed at the bottom of the Dead Sea.

11. Another feature struck me as very remarkable. The river Jordan, as it is now, could have had nothing to do with the formation by erosion of the great valley through which it flows. It runs in a distinct ravine of its own, which it has worn in a tortuous course, through the bed of the valley, from end to end. As compared with the valley, this ravine is of recent origin; and it presents, along nearly its entire length, such an appearance as would lead to the conclusion that the river was at some former period much larger than it is now.

12. I have, during several visits, closely examined about three-fourths of the ravine of the Jordan; its features differ at different points, and probably the most characteristic are at the section near Bethshean, and from Damieh, southward, to Jericho. The bed of the valley is, as I have said, level, having no visible incline towards the river. On looking across it, from the foot of the mountain-range, on either side, the river is not seen at all, and the plain appears unbroken; but, on passing over it, one comes suddenly and unexpectedly to a ravine, varying from 50 to 150 feet in depth, and from 200 to 700 yards in width. Its sides are cut down sharply through the upper alluvial coating and the underlying calcareous strata; they are also deeply indented, and worn away by the action of winter rains and lateral streams, so that along each bank is a rim of white conical mounds; and in some places the mounds stand two or three deep, their tops mostly uniform in height with the adjoining plain.

13. It is evident that at one period the river covered the entire breadth of this ravine, for the sides bear everywhere traces of the action of water; and indeed, the ravine could only have been cut out by such action. Now, however, by far the largest portion of its bed is dry and coated with deep alluvial soil, here and there cultivated by the nomad Arabs, but generally covered with rank grass, or jungles of oleander, willow, and tamarisk; while the river has another channel, averaging about 30 yards wide, cut deeply into the alluvial bed of the ravine, and most tortuous in its course; now sweeping the western, now the eastern bank of the ravine, and occasionally doubling back, like the coils of a serpent. Through this channel the river rushes in a rapid current. During summer and autumn it is low, and the banks of its channel are from five to ten feet high; but in spring, when the fountains are copious, and the tributaries swollen with melting snow, the stream rises up to the level of its banks, and in places, especially in the lower part of the valley near the Dead Sea, it overflows the whole bottom of the ravine. When I was going from Jerusalem to Moab, in the spring of 1874, I found the entire bed of the ravine opposite Jericho covered with water. The fords were then impassable, and I was obliged to travel a day's journey northward, so as to cross by the ferry-boat on the caravan route from Nabulus to Es-Salt.

14. This fact illustrates that statement in the book of Joshua, where, in describing the passage of the river by the Israelites, the writer says: "The Jordan is full up to all his banks all the time of harvest" (Josh. iii. 15). In the low plain harvest begins early in April, which is the time of highest flood; and then the swollen river not only rises over its immediate banks, but covers the ground up to the outer banks of the ravine. I noticed at several places south of the ford of Damieh two distinct lines of terraces along the Jordan, below the general level of the plain, showing that at some remote period the river ran upon a higher level; and that, from some cause, it sunk forty or fifty feet to its present channel. All this process of subsidence, however, must have been prehistoric, and could have had no connection with that catastrophe which led to the destruction of Sodom. It would be interesting to make a complete survey of the banks of the Jordan, so minute and systematic as to show whether the gradual sinking of the bed of the river has been connected with any corresponding depression of the Dead Sea.

15. Another feature of the Jordan valley deserves the attention of the geologist, and perhaps, also, to some extent,

of the antiquarian. It contains a large number of remarkable mounds, generally of the form of a truncated cone; their sides steep and regular, as if scarped, and occasionally strewn with ruins of a primeval type. The cup-shaped mound of Tell el-Kady I have already mentioned; I observed several very large ones not far from Bethshean, and there are others dotting the plain of Jericho. It is worthy of note that mounds of a similar shape occur at intervals along the great Syrian valley up to Antioch, and there are several on the plain of Damascus. Some of them are unquestionably artificial—that, for example, at Emesa, on which the famous temple of the Sun stood, and that on the site of Loadicea ad Libanum, a few miles farther south. What are these mounds? By whom were they constructed? Do they point back to a primeval people, whose name and history have alike been lost? Excavation might reveal the secret, and bring to light some strange relics of a prehistoric age. On one of the mounds near Damascus I discovered a slab of limestone containing the figure of an Assyrian priest in relief, now, I believe, in the British Museum.

FORDS OF THE JORDAN.

16. The fords of the Jordan have always been important in connection with the history of the country. A ford, called *Vadum Jacob* by William of Tyre, was an important pass in the time of the Crusades, and was probably at the place where the "Bridge of Jacob's Daughters" now spans the stream. The origin of the name is unknown; but, perhaps, the ford was confounded with the Succoth, where Jacob crossed the Jordan. Near the place where the upper Jordan falls into the Sea of Galilee, the stream can be crossed almost anywhere; and here the multitudes that followed our Lord from Capernaum were able to pass over to where He fed the five thousand, on the side of the plateau of Bashan (Mark vi. 32, *seq.*).

17. The first ford on the southern division of the Jordan is about half a mile below the lake, where the ruins of a Roman bridge lie. It is on the road leading from Tiberias to Gadara, and it was probably here our Lord crossed, when He went from Galilee to Judæa "by the farther side of Jordan" (Mark x. 1). About five miles below it, is *Jisr-el-Mejâmia*, "the bridge of the meetings," now the only passable bridge on the river. Over it runs the old caravan route from Damascus to Egypt, by Gadara. Probably a Roman bridge existed here, but the present structure is Saracenic. At Succoth, where

Jacob crossed when on his way from Padanaram, there is a good ford. It may be the *Bethbarah*, "house of passage," where the Israelites intercepted the routed Midianites (Judges vii. 24). It is still the ford by which the Eastern nomads cross on their periodical invasions of the plain of Esdraelon. The next ford of historic importance is that near the confluence of the Jabbok, on the ancient road from Samaria to Ramoth-gilead. Its modern name is Damieh, which is probably derived from the "city *Adam*," mentioned by Joshua in connection with the passage of the Israelites (iii. 16):—"The waters which came down from above stood and rose up upon an heap very far off, by the city *Adam*." This was the scene of that tragic event, when the Gileadites under Jephthah "took the passages of the Jordan towards Ephraim," and distinguished friends from foes by the word *Shibboleth*. It is a remarkable fact that at the present time there is a palpable distinction between those residing on the east and those on the west of the Jordan, in the pronunciation of certain words. It would be as easy to find a *Shibboleth* now as it was in the days of Jephthah (Judges xii. 5 and 6).

18. There are several fords in the plain of Jericho, but none of them are passable during harvest, that is, from March till June. This is the "holy ground" of the Jordan, the scene of those stupendous miracles of power and mercy when a way was opened through the swollen river to let Israel pass over; and when, again, the waters were divided for Elijah and Elisha. Here occurred a still greater miracle when our Lord was baptized: "And, lo, the heavens were opened unto Him, and He saw the Spirit of God descending like a dove, and lighting upon Him: and, lo, a voice from heaven, saying, This is my beloved Son, in whom I am well pleased" (Matt. iii. 16, 17).

19. The passage of the Jordan by the Israelites is described with great minuteness; and a knowledge of the topography and physical features of the district throws much light on the Biblical narrative. The people had been encamped for some time "in the *Arabah* of Moab." The word *Arabah*, translated "plain" in our version, is the proper name of the southern section of the Jordan valley, and hence the Dead Sea is called "the Sea of the *Arabah*" (Josh. iii. 16). The word is from a root which signifies to be white or sterile, and is very appropriate. The *Arabah* is here perfectly flat, and about seven miles wide from the Jordan to the foot of the mountain-chain of Moab. The camp was placed close to the mountains, under the projecting peak of Nebo. When I stood upon Nebo in the spring of 1874, I was greatly impressed with

the commanding view it affords, not merely of the whole plain of the Jordan, four thousand feet below it, but of the whole of Palestine, from the heights of Naphtali, on the north, to the Negeb, beyond Hebron, on the south.

20. Before the passage, the Israelites removed to the bank of the Jordan, opposite Jericho. Then we read:—"And as the bearers of the ark came to the Jordan, and the feet of the priests, the bearers of the ark, were dipped in the margin of the waters (for the Jordan is full up to all its banks all the days of harvest)." The explanatory clause here is very important. Had the Jordan not been in flood, the waters would have been confined within their own proper banks, which are perpendicular, so that the feet of the priests could not have been dipped in the water without their plunging over-head into the rapid current. The sacred writer consequently explains how the feet of the priests came to be dipped in the waters; it was because the river had risen over its proper banks and covered the flat bed of the ravine with a shallow flood.

21. Then the miracle took place. The waters that came down from above, that is from the upper part of the river, "stood—rose up one heap, a very great distance off, at Adam, a city which is beside Zaretan, and those which flowed down to the Sea of the Arabah, the sea of salt, were exhausted, were completely removed; and the people passed over opposite Jericho." I translate from the Hebrew, endeavouring to give as fully as possible the exact meaning of the passage. The name *Adam* is still retained, as I stated already, in the ford *Damieh*, seventeen miles north of Jericho; and the name *Zaretan* is also retained in the modern *Surtabeh*, a ruin on the top of a very conspicuous hill just over the ford. The great valley is at this point narrower than elsewhere, so that here, as in many other cases, the natural and the supernatural were combined in working out the will of God in reference to His Church.

22. The exact scene of our Lord's baptism is not known; but there is reason to believe that it was at least not far distant from the place where the Israelites crossed.

THE DEAD SEA.

23. Not the least interesting part of the great valley is the section which constitutes the basin of the Dead Sea. The scenery is widely different from that farther north, though there is no break or interruption in the mountain-chains. Trees entirely disappear, the cliffs that hem in the valley are white limestone, naked and rugged, in some places

rising sheer out of the water; the surface of the plain along the shores is a desert—an *Arabah*, covered with a white nitrous crust, like hoar-frost; vegetation only exists where a little fountain bursts from the ground, or a streamlet murmurs down to the lake. In fact, for stern grandeur, and silent, lonely desolation, the shores of the Dead Sea are almost unparalleled.

24. As in the environs of the Sea of Galilee, we find here also many traces of volcanic action, both recent and remote.* The warm spring of Callirrhoe on the eastern side has been long celebrated; and there are two others, though less copious, on the western side. Most of the fountains around the lake are brackish; and at the south-western extremity is a range of hills, about seven miles long and some 300 feet high, composed almost entirely of rock-salt, and bearing an old and well-known name,—“the hills of *Sodom*.” These facts, together with the great and incessant evaporation, account for the intense saltiness of the sea. Canon Tristram describes a valley at the northern end of the hills of Sodom, of which the sides are cliffs of old limestone, showing here and there on their surface traces of post-tertiary marl; but he says, “since the marl has been washed out, there has been a second filling-in of an extraordinary character, which is only now in course of denudation. There are exposed on the sides of the Wady, and chiefly on the south, large masses of bitumen mingled with gravel. These overlie a thin stratum of sulphur, which again overlies a thicker stratum of sand, so strongly impregnated with sulphur that it yields powerful fumes on being sprinkled over a hot coal. Many great blocks of bitumen have been washed down the gorge, and lie scattered over the plain below, along with huge boulders, and other traces of tremendous floods. The phenomenon commences about half a mile from where the Wady opens on the plain, and may be traced at irregular intervals for nearly a mile farther up. The bitumen has many small water-worn pebbles embedded in it. We are at once led to inquire what has been the probable origin of this singular deposit. The first solution that suggests itself is that the bitumen and sulphur have been washed up when the sea was at this level; the next, that it may have been deposited by a spring on the spot. Of the latter we could find no traces, and all appearances are against it. Against the former supposition are

* These I purpose to examine with some care, as I believe they serve to explain, if not the actual destruction of Sodom and Gomorrah, at least the mode in which they probably were destroyed by the employment of natural agencies under supernatural guidance.

the objections—first, that the formation is evidently subsequent to the scooping-out of the marl, and therefore to the subsidence of the lake; secondly, that the bitumen and sulphur are not deposited as they would have been by a tide or stream, but at most irregular heights, sometimes detached, sometimes in masses slightly and irregularly connected with the next fragment by a thinner stratum. The layer of sulphurous sand is generally evenly distributed on the old limestone base, the sulphur evenly above it, and the bitumen in variable masses. In every way it differs from the ordinary mode of deposit of these substances as we have seen them elsewhere. Again, the bitumen, unlike that which we pick up on the shore, is strongly impregnated with sulphur, and yields an overpowering sulphurous odour; above all, it is calcined, and bears the marks of having been subjected to extreme heat. In weight and appearance it differs from the bitumen of the shore as coke does from ordinary coal."

25. This discovery seems to me very important, and Canon Tristram's remarks upon it are interesting to the Biblical student; they are as follows: "Here, so far as I can judge, we have the only trace of anything approaching to volcanic action which we have met with in our careful examination of the northern, western, and southern shores. The only other solution of the problem, the existence of a bituminous spring when the supply of water was more abundant, would scarcely account for the regular deposition of the sulphurous sand, and then of the sand with the bitumen superimposed. I have a great dread of seeking forced corroborations of Scriptural statements from questionable physical evidence, for the sceptic is apt to imagine that when he has refuted the wrong argument adduced in support of a Scriptural statement, he has refuted the Scriptural statement itself; but, so far as I can understand the deposit, if there be any physical evidence left of the catastrophe which destroyed Sodom and Gomorrah, or of similar occurrences, we have it here. The whole appearance points to a shower of hot sulphur and an irruption of bitumen upon it, which would naturally be calcined and impregnated by its fumes; and this at a geological period quite subsequent to all the diluvial and alluvial action of which we have such abundant evidence. The vestiges remain exactly as the last relics of a snow-drift remain in spring—an atmospheric deposit. The catastrophe must have been since the formation of the Wady, since the deposition of the marl, and while the water was at its present level; therefore, probably, during the historic period." (*Land of Israel*, pp. 355, *seq.*)

26. On the peninsula of Lisân, a low bank which projects upwards from the south-eastern angle of the lake a distance of nine miles, pieces of sulphur and bitumen, rock-salt and pumice-stone, are found in great profusion. Probably, if examined with care, geological phenomena similar to those in Wady Mohawât, might be found on this peninsula, and some additional light might thus be thrown upon the mode in which the cities of the plain were destroyed. Poole says, "the soil appeared sulphurous" (*Journal of Royal Geographical Society*, xxvi. 62). It is well known that during and after shocks of earthquake, to which this region is subject, large masses of bitumen rise to the surface of the lake between the promontory of Lisân and the western shore. North of the Lisân, the mountains of Moab rise from the water's edge in sublime cliffs of red sandstone or white limestone. Basalt also appears in places, sometimes overlying the limestone, as on the plain of Bashan, and occasionally bursting through the sandstone strata in dykes and veins. The ravines of Moheb, the Arnon of Scripture, and Zerka Maîn, are like huge rents in the mountain-chain. Among other smaller basaltic streams, three were found by M. Lartet, bordering on the eastern edge of the sea, to the south of the little plain of Zarah. The plain between the mountains of Moab and the mouth of the Jordan, under the heights of Nebo and Pisgah, is generally well watered and covered with luxuriant vegetation. Along the shore pieces of pumice-stone, lava, and bitumen are found embedded in the sand and mud, as if washed up by the waves.

27. The dimensions of the Dead Sea have never been accurately determined. Its length is about forty-five miles, but this varies considerably at different seasons of the year, and in different years. When the sea is filled up by winter rains, the flat plain on the south is submerged for several miles. The annual rainfall, too, is not uniform in Palestine. Some years it is more than double what it is in others; and this produces a corresponding effect upon the volume of water in the sea, and consequently on its area. The sea attains its greatest breadth opposite Engedi, where it measures nine and a half miles. The peninsula of Lisân divides the sea into two unequal parts—the northern, an elongated oval; the southern, nearly circular. The narrowest part of the channel between the peninsula and the mainland is about a mile and three-quarters wide, and is sometimes fordable.

28. The physical conformation of the bed of the lake is worthy of special notice. The section north of Lisân is a deep, uniform basin, like a huge crater, its greatest depth being 1,308 feet (Lynch, *Official Report*, p. 43); the southern section

is very shallow, a few feet, and sometimes only a few inches, of water covering a bed of soft, slimy mud. Of this latter section Tristram says, "Sulphur-springs stud the shores, sulphur is strewn, whether in layers or in fragments, over the desolate plains; and bitumen is ejected in great floating masses from the bottom of the sea, oozes through the fissures of the rocks, is deposited with gravel on the beach, or, as in Wady Mohawât, appears with sulphur to have been precipitated during some convulsion: Everything leads to the conclusion that the agency of fire was at work, though not the overflowing of an ordinary volcano."

29. I now turn for a moment to the Scripture narrative. The references to the Dead Sea in the Bible are few, and mostly incidental. Three of them call for special attention here. In Gen. xiii. 10, where the sacred writer relates the story of the separation of Abraham and Lot, he represents the two as standing on the mountain-top east of Bethel:—"Lot lifted up his eyes, and beheld all the circuit of the Jordan, that it was well watered, before the Lord destroyed Sodom and Gomorrah." It has been inferred from this that the cities of Sodom and Gomorrah were in sight from where Lot stood, and must, therefore, have been situated at the northern end of the lake. But this does not follow. Lot "beheld the circuit of the Jordan"; it is not said, or implied, that the cities were in sight. One thing is evident from the passage—that the valley of the Jordan was very fertile before the destruction of the cities, but not so afterwards; and this is corroborated by the narrative in Gen. xix. 24, 25. I have stood upon the same spot, and the view over the Jordan valley is now as dreary and desolate as could be well imagined.

30. The second passage is Gen. xiv. 2-10, containing the story of Lot's capture by the Eastern kings. At ver. 3 we read—"All these were joined together in the vale of Siddim, *which is*" (or, it is) "*the salt sea.*" There cannot be a doubt as to the meaning of the Hebrew; the region called the "vale of Siddim" in the time of Lot, had become, in the time of the writer, "the Salt Sea." * Some, however, attempt to get over the plain signification by saying that the clause, "*which is the Salt Sea,*" is an explanatory note interpolated by some subsequent reviser; but this is untenable, for the clause is found in all the ancient MSS. and versions, and in the Targum of Onkelos. Its genuineness rests on the same basis as the

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other portions of the narrative. We have still another incidental remark, which helps us to identify the site of the cities: "The vale of Siddim was full of pits of asphalt." Now, there is no part of the valley north of the lake to which this would apply; nor, indeed, is there any part of the plain adjoining the lake, north or south, now full of bitumen-pits.

31. The third passage is Gen. xix. 24, 25: "Then the Lord rained upon Sodom and upon Gomorrah brimstone and fire from the Lord from the skies. And He overthrew those cities, and all the plain, and all the inhabitants of the cities, and that which grew upon the soil." We are afterwards informed that Abraham on the following morning went from his camp at Hebron to a neighbouring mountain-peak, and "looked out upon Sodom and Gomorrah, and upon all the land of the plain, and behold, and lo, the smoke of the land went up as the smoke of a furnace."

32. There can be no doubt from these statements that the destruction of the cities was miraculous. A shower of ignited sulphur was rained upon them. But may we not connect this fact of Biblical history with the facts stated above as observed by Canon Tristram and others? May we not admit that while the ultimate cause was miraculous, natural agencies were employed? We might suppose a mass of burning sulphurous matter to have been ejected from some open crater, as is often the case with Vesuvius; and this falling in showers upon the cities, and the bituminous plain around them would have produced just such form of conflagration as Abraham saw from the heights of Hebron. Bitumen is very inflammable, and the plain of Siddim was filled with bitumen-pits. Canon Tristram says of Wady Mahawât, at the side of the plain, that "the whole appearance points to a shower of hot sulphur, and an irruption of bitumen upon it." The smoke from such a conflagration would be like the smoke of a furnace, and would cover the whole plain. Then the sacred writer says that the vale of Siddim became the Salt Sea, or was submerged. The southern part of the lake is, as I have shown, an expanse of slimy mud, covered with only a few feet of water. Suppose the vale to have sunk a few feet, or the water to have risen a few feet, after the conflagration; either supposition would accord with the Biblical narrative, would not be without a parallel in the history of countries exposed to volcanic eruptions, and would not be opposed to the results of modern investigations.

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Sea extended no farther south than the peninsula, and that the cities destroyed lay on the south of the lake as it then existed. Lot fled from Sodom to Zoar, which was *near*; and Zoar, as we know, was in the mouth of Wady Kerak, as it opens upon the neck of the peninsula. The fertile plain, therefore, which Lot chose for himself, where Sodom was situated, which was well watered, like the land of Egypt, lay also south of the lake 'as thou comest to Zoar.' Even to the present day more living streams flow into the Ghor at the south end of the sea than are found so near together in all Palestine besides." (*Physical Geography of the Holy Land*, p. 21.)

34. All this, I admit, is theory; but then it is theory suggested by the physical aspect of the country, and by scientific observation—theory, too, which accords with and explains the Biblical narrative. The subject is not one for vague speculation, much less for dogmatic assertion. The problems which the Dead Sea presents must be solved, if solved at all, by careful scientific research.

35. One other point I wish to note ere I close. The hillsides and narrow strips of plain, on both the eastern and western shores of the Dead Sea, appear to be marked by a series of terraces, in all probability the shore-lines of former ages. The highest of these I noticed when examining the ranges of Moab under Nebo. Its elevation corresponds pretty nearly with the level of the Mediterranean, being about 1,300 feet above the surface of the lake. There is a corresponding terrace on the western side, of which Canon Tristram says:—"These terraces in the old secondary limestone must be about the present level of the Mediterranean, and they seem to tell of a period long antecedent to the tertiary terraces and deposits below." (*Land of Israel*, p. 247.)

36. About 230 feet above the level of the lake are traces of another ancient shore-line, marked by a strip of alluvial marl adhering to the rocks and cliffs, particularly at the north-west angle. The deposit is mixed with shells of existing species, layers of gypsum and gravel. This terrace, or shore-line, might correspond with the general level of the lower section of the great valley, through which, as I have shown, the Jordan has cut for itself, at a more recent date, a deep channel. It has also been observed that where there are ravines running down to the lake between high cliffs, the deposit reaches up their sides in places to a height of 400 feet, and then slopes away in a series of terraces to the level of the lake, indicating, just as is indicated at various places along the banks of the Jordan, a series of stages in the

depression of the water, each stage apparently caused by some great convulsion.

37. A similar phenomenon was observed by Canon Tristram along the western shore, where he counted "no less than eight low gravel terraces, the ledges of comparatively recent beaches, distinctly marked. The highest of these was 44 feet above the present sea-level." It would seem, in fact, that at some very remote period the whole valley, from the base of Hermon to the water-shed near Kadesh, on the borders of Edom, was the bed of a lake. While it remained in that state, those deposits were formed which now constitute the plain through which the Jordan flows. From some cause now unknown, the waters gradually decreased until they were reduced to their present level; leaving along the mountain ramparts that hemmed them in on each side distinct traces of the several stages in their subsidence.

38. The water of the Dead Sea is intensely salt and bitter, and its specific gravity is consequently very great. It contains about 26 per cent. of pure salt, yet it is transparent, and of a delicate green hue. It is fatal to animal life; and this fact, according to Jerome, was the origin of the name Dead Sea. Lying in a deep basin, encompassed by bare white cliffs and white plains, exposed during a great part of the year to the burning rays of a Syrian sun, without a cloud to dim their fiery heat, it is not strange that the shores of the Dead Sea should exhibit an almost unexampled sterility and death-like solitude; nor is it strange that in a rude and unscientific age the sea should have become the subject of wild and wondrous superstitions. The sky over it is brilliant; the colouring of the cliffs and glens along its eastern shore, when the last rays of the sun fall on them, is exquisitely beautiful; but, as Mr. Grove well says, "There is something in the prevalent sterility and the dry, burnt look of the shores, the overpowering heat, the occasional smell of sulphur, the dreary salt marsh at the southern end, and the fringe of dead drift-wood round the margin, which must go far to excuse the title which so many ages have attached to the lake, and which we may be sure it will never lose."

The CHAIRMAN (J. E. Howard, Esq., F.R.S.).—I am sure you will all unite with me in presenting the cordial thanks of the Institute to the learned traveller who has given us so interesting a description of the regions with which this paper deals. (Hear, hear.) We are under special obligations to those who recall to us facts connected with those varied scenes and countries which the sacred Scriptures take us over in their course. (Hear.) As we study these scenes, we gradually learn many facts which corroborate the exceeding

literality of the Scriptures, a circumstance which is not only important as regards the view we take of the Scriptures themselves as inspired works, but, in my opinion, it has a very strong bearing against those who would make out that the book of Genesis and the earlier books of the Old Testament are forgeries of a date as late as the Babylonian Captivity. (Hear, hear.) If this really were the case, I do not think we should find the extremely literal and remarkably graphic touches which have been noticed by Dr. Porter, and of which, indeed, I may say, the book of Genesis is full. I shall now be glad to hear any remarks from any present.

Mr. D. HOWARD.—I think the paper we have just heard one of the very highest value, not merely from the extreme interest it awakens on important matters of Biblical criticism, but also when regarded from a geological point of view. Here we have disproofs of the most absolute character of a mere uniformitarianism and proofs of convulsions of the vastest kind. Surely some stupendous convulsion has depressed the Valley of the Jordan, which begins at the level of the sea, and sinks to the profound depths of the Dead Sea, which in itself is one of the most remarkable of the phenomena of the globe. Indeed, at each step of the Valley we have the most striking proofs of uniformitarianism, but not uniformitarianism in the sense in which it is often understood. We have the water-worn terraces which form the level of the Valley and the deep bed, dug out apparently after the alteration of the level, causing the increased rapidity of the river. A more remarkable study of the mode of the formation of valleys could not, I believe, be found; but still more remarkable is the formation of the Dead Sea. There are few more interesting geological formations than the salt-beds, of which that at Stanfurth is perhaps the most perfect example. In the Dead Sea we have before our eyes the conditions under which such a salt-bed may form. A diminution in the supply of water from the Jordan would cause the almost saturated brine of the Dead Sea to deposit its salt in the same state as in the beds mentioned, but with this difference, that here, in the Jordan Valley, you have the extraordinary evidence of volcanic action which has been described in Dr. Porter's paper. You do not usually find beds of salt associated with sulphur and bitumen, pointing as the latter do to the marvellous convulsion which destroyed the Cities of the Plain. The problem is one which would take a great deal of time to work out, and more minute study than it has yet been feasible to give to it on the spot; but there are few phenomena more interesting, from a geological point of view, than those presented by the Valley of the Jordan. It is extraordinary to find the notices of this Valley, as given in the Old Testament, so scientifically accurate. Undoubtedly the Old Testament was not intended to teach science; and it is a remarkable proof of the truthfulness of the eye-witnesses, that these little points of detail which are so compatible with scientific truth, are those which it is absolutely impossible that a forger should have put in. It is inconceivable that a forger,—I do not mean in the worst sense of the word, but some old scribe improving ancient documents, could

have put in these minute touches of geological accuracy of which we have heard, and which are of the highest value in demonstrating the verba accuracy which prevails in the Old Testament. (Hear, hear.)

A MEMBER.—There is one question that I should like to ask Dr. Porter I have been much interested in what has been said about the southern end of the Dead Sea. Dr. Porter is here ranged against several learned authorities as to the theory of the site of Sodom and Gomorrah. I venture to think that Dr. Porter's view is exceedingly likely; and yet there is this difficulty: where is there a volcano sufficient to account for the eruptions to which reference is made? Is it likely that the northern end of the lake, which Dr. Porter says, in paragraph 28, is "like a huge crater," formed part of a lake which must have existed in pre-historic times, or is it possible that the great depression it exhibits was of a volcanic character? Had volcanic agency been at work, would there not have been a gradual raising of the surface, rather than a depression? In the southern end of the lake, Dr. Porter says the depth varies from "a few feet" to "a few inches," but the depth is not very great in any case. How is volcanic agency discoverable in such a shallow slip of sea? We hear of the discoveries in the Zuider Zee and of the lake-dwellings found in Switzerland; is it not probable that in this case persistent research might make some further discoveries?

DR. PORTER.—I have no idea whatever whether there was in historic times a volcano in connection with the northern section of the lake; but I think it is by no means improbable that in the southern section of the lake there may have been a small volcanic opening, and I will give you my reason for saying this. I have travelled in the northern section of Palestine, near the present town of Safed, which is a centre of volcanic action in that country, and I saw there, about two or three miles north-west of Safed, a little opening in the plain on the summit of the mountains—an opening that had manifestly been a crater, and which cannot be of a very ancient date. It is not more than eight or ten times the size of this room. I think it not unlikely—of course, this is merely a theory of my own—that there may have been some little opening such as this, in the centre, or near the centre, of the southern section of the lake. We know that at the present day, when earthquakes occur, large masses of bitumen are thrown up from the bottom of that southern section of the lake, and are found, by the Arabs, floating on the surface. When on these occasions masses of bitumen are found thrown up from the bottom of the lake, they must come from some opening, and I think it most likely that some such opening may exist in the southern section of the lake. With regard to the dwellings, I have looked at the ruins north, east, and west of Galilee, and have found that they were built of the materials there at hand, and never, like portions of the Temples of Baalbeck, of materials brought from a great distance. My opinion is that the houses in the plain of Sodom were built in part of bricks formed of bituminous clay, and also partly of bituminous limestone, which is found there to a considerable extent, and that bituminous limestone would burn like coal, when once set on

fire, while bituminous clay, when acted upon by a strong heat, would melt away. Consequently, if the houses of Sodom and Gomorrah were built of such materials, the action of fire would completely destroy them. (Hear, hear.)

Rev. C. LLOYD ENGSTRÖM.—As chaplain of one of the largest children's asylums in England, I wish to say that I find my satisfaction in hearing this paper infinitely increased by the knowledge, derived from my use of previous papers read at the Victoria Institute this session, that it will not only help me better to understand that blessed Book, of the truth of which I find daily confirmations in nature and science, but enable me to explain the sacred narrative with more life and reality to the lambs of Christ's flock.

Rev. ALFRED KENNION.—Having had the privilege of travelling in Palestine, I can entirely corroborate all I have heard in the very interesting paper that has been read by Dr. Porter this evening. Perhaps I may be permitted to ask one question. Having said, in the first place, that my view as to the site of the cities of Sodom and Gomorrah has been for many years precisely that which has been put forward in this paper, I would add that one difficulty has nevertheless occurred to me, and I shall be glad if Dr. Porter will solve it. The attack by Chedorlaomer and his allies was made from the south. Is there a roadway by which his invading army could have swept up along the other side of the Dead Sea, so as to reach, as he afterwards did, up the Jordan valley to Damascus and the neighbourhood? I do not know the eastern shore of the Lake, and it has always been a difficulty to me, if the site of the town was on the southern shore of the sea, how his army was afterwards found up in the region in which we know Abraham subsequently attacked it. Passing from this to another subject, the site of Damieh, I should be glad to know whether that translation, which I have never paid any attention to, as to the water rising up in a "heap," is exact and accurate? It seems to me (although I am a full and implicit believer in miracles), that we ought not to foist in as a miracle, that which may be accounted for on natural grounds, unless there is strong reason for doing so. It has frequently occurred to me that an earthquake, or something of the kind, may have raised the level of the ground at that particular point—Damieh,—that this might have made a lake at that place, and the lower part of the waters would be drained off into the Dead Sea; that just at that particular juncture at Damieh the ground would rise, so as to form a lake in the northern part and drain off the water towards the south. I should like to hear whether this can be confirmed. The description given by Dr. Porter of the general character is, as all of us know, strikingly accurate and correct. I may add that I have had great pleasure in listening to this paper. (Hear, hear.)

Dr. PORTER.—In reference to the first question just asked me, as to whether there is a road running along the banks of the Dead Sea, I may state that if there be a difficulty arising on this point it is not applicable to my theory any more than to the other; because we well know that the forces which came from the east, swept down in the first place through Bashan, and along the heights of Moab, then past Kadesb, some forty or fifty miles

south of the Dead Sea; and then they came up and smote the Amalekites, in a position to the south-west of the Dead Sea, after which they went and attacked Engedi; so that if the cities stood here (pointing to the map at the north end of the sea), they must have come from Engedi in this direction. Supposing the cities stood here (pointing to the south end), then they turned back from Engedi, having come, as I believe, from the land of the Amalekites across the high land called the Negeb, over which there is a road descending on Engedi, and then they turned southward to this spot (pointing to the south-western shore of the Dead Sea). But in going northward from Sodom after its capture, they may either have marched along the eastern side of the Dead Sea, ascending the heights of Moab, traversing Gilead in the route of the Israelites under Moses when invading Bashan, and then descending again to the upper valley of the Jordan, where Abraham attacked them; or they may have followed the western shore of the Dead Sea as far as Engedi, and then, there being no path along the shore farther north, ascended the mountains and crossed over by very difficult, but still practicable roads for horsemen and camel-men, into the valley of the Jordan at Jericho. While making this march Abraham would naturally have heard of them. Therefore, whatever be the difficulty, it is equally applicable to either theory, but it is greater when applied to the theory which places the cities in the north.

Rev. C. LLOYD ENGSTRÖM.—During a lecture at a meeting recently held under the auspices of a leading London society a suggestion was made by a well-known lecturer, which I think was quite insufficient to account for the miracle of the “heaping” up of the water. It was, that a large piece of rock might have fallen and blocked the river at, I think, the Damieh ford.

Dr. PORTER.—I am particularly well acquainted with that section of the river. All I can say in reference to the theory just alluded to is, that we have heard of the Irish legend, which tells how the giant Finn M'Coul moved large rocks into the sea and made a roadway from Ireland to Scotland, and it would require some such rocks as he must have employed, to do what has been suggested in the case of the Jordan. There are in reality three valleys or ravines: there is the great valley, measuring at the place indicated at least six miles in width; that would require a tolerably large rock. Then there is the lower ravine through which the Jordan itself runs, and it is about three-quarters of a mile in width at the place pointed out; that also would take a pretty large piece of rock to block up the passage. Upon every ground I believe that the miracle was an absolute miracle; the Hebrew words can only mean, “the waters stood and rose up one heap,” just as the waters must have risen up on each side of the Israelites, when they passed through the Red Sea. (Hear, hear.) This I believe to be the true meaning of the Hebrew words, and it is utterly impossible for any one visiting the ford of Damieh, to imagine that the river could have been stopped at that point by any naturally-placed or falling rock.

Mr. R. W. DIBDIN.—With regard to the word “Shibboleth,” mentioned in the seventeenth paragraph, I wish to know whether the same difficulty is found

in regard to pronunciation now, as was formerly associated with that particular word. I should also like to ask whether Dr. Porter thinks there is any trace of the old inhabitants on the other side of the Dead Sea. We can hardly suppose that the difference of pronunciation arises from mere geographical causes; can Dr. Porter say whether there is any trace of the two tribes formerly existing on the two banks of the Jordan?

Dr. PORTER.—That is a most interesting problem, and by no means the least interesting of those which presented themselves when I was travelling, as I have done repeatedly through that country. It is a fact which I have followed through past history down to the present time, that there has been and is a marked distinction between the people who inhabit the eastern bank of the Jordan, and those who reside on the western—a distinction that is seen in their habits—those on the eastern side generally living in tents, and following the pursuit of shepherds; while there is also, and has been from the earliest times, a marked distinction in their dress. Those on the east of the Jordan wear the *agyl*, a fillet of camel's hair bound round the handkerchief which covers the head, and this is not found in the west. From the earliest period down to the present day, as is noticed in the case of the word "Shibboleth," there has been a marked difference in pronunciation. I could mention familiar Arabic words which resemble "Sibboleth" and "Shibboleth." There is the word *kalb*, which signifies "heart," which they pronounce differently on the eastern and western sides of the Jordan. There are a number of other words, especially sibilant words, in which there is a similar difference of pronunciation. I can only account for this by saying that there has been a regular succession of people inhabiting the eastern and western sections of the country, and that these have in each case transmitted their peculiarities of dress, habits, modes of life, and accent, from ancient down to modern times. Of course, in the earliest historic period there was the Phœnician language, which was closely allied with the Hebrew, and that was followed by the Hebrew under the Jews. The Hebrew was in turn followed by the Arabic, which is a cognate language, and almost identical in its roots with the Hebrew.

Mr. ENGSTRÖM.—Do I understand that the northern part of the Dead Sea is supposed to have come to be a sea at the time of the destruction of Sodom and Gomorrah, or is it supposed that it was there anterior to the time of Abraham and Lot?

Dr. PORTER.—I am not aware that any one supposes that the northern section of the Dead Sea was ever anything else than a sea.

Mr. ENGSTRÖM.—It could not conceivably have been the crater of a volcano?

Dr. PORTER.—Not in historic times.

The CHAIRMAN.—In closing this meeting I have to thank Dr. Porter for a most interesting evening.

The meeting was then adjourned.

MEETING, MAY 20, 1878.*

THE REV. R. THORNTON, D.D., V.P., IN THE CHAIR.

The Minutes of the last Meeting were read and confirmed; and the following Elections were announced :—

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Also the presentation of the following Works for the Library :—

“Proceedings of the Royal Institution,” Part 68. *From the Institution.*

“Proceedings of the Royal United Service Institute,” Part 94.

From the Institute.

“Proceedings of the First Presbyterian Congress,” 1877.

From Rev. Professor Watts.

“Modern Pseudo-Philosophy.” By J. M. Winn, D.D. *From the Author.*

“Spiritualism.” By T. W. Greenwell, Esq.

Ditto.

A Paper by the Bishop of Haiti.

Ditto.

A Paper on “Physical Geography” was then read by Mr. J. Thornhill Harrison, M. Inst. C.E., F.G.S. A discussion ensued in which the following took part :—Rev. J. Fisher, D.D.; C. Brooke, Esq., F.R.S.; Rev. R. W. Kennion, M.A.; D. Howard, Esq., F.C.S.; Sir J. Fayrer, F.R.S.; H. Cadman Jones, Esq.; R. Clutterbuck, Esq., F.G.S.; and the Rev. D. M. Berry, M.A. The author having replied,

The meeting was then adjourned.

* Intermediate, the next being the Annual Meeting. See Vol. XIII.

ERRATA.

Page 149, 37th line, *read* נִיחֹן in Gen. is certainly distinct from פִּרֵּת.

- „ 150, 13th line, *read* פִּיטֹן for פִּישֹׁן.
- „ 153, 14th and 19th lines from bottom, *for* “Amon” *read* “Amou.”
- „ 163, line 36, *for* “that at the meeting,” *read* “this at a meeting.”
- „ „ *Note, for* “x.” *read* “xi.”
- „ 187, line 17, *for* “much” *read* “often.”
- „ „ line 3 from bottom, *read* “contains their common faith.”
- „ 163, line 3 from bottom, *for* “Buck” *read* “Busk.”
- „ 164, line 7, *for* “fibia” *read* “fibula.”
- „ 239, note § is a quotation.
- „ 241, line 16, *read* “those countries.”
- „ 242, line 1, *read* “less common.”



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Towersey Vicarage, near Thame.
 1875. Hargreaves, Rev. P. (Wes. Min.), *Clarkebury, Transkei,*
via King William's Town, South Africa.
 1878. Harper, the Ven. H. W. M.A. Archdeacon of Canterbury.
Timaru, Canterbury, New Zealand.
 1871. † Harries, G. Esq. *Richestone, Milford Haven.*
 1870. Harris, William John, Esq. M.R.C.S.E. L.A.C. F.M.S.
 13, *Marine Parade, Worthing.*
 ⚭ Harrison, Gibbs Crawford, Esq. H.M. Civ. Serv. 124,
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 1876. Harrison, Rev. J. D.D. Edin. *Fenwick Vicarage, Askern,*
near Doncaster.
 1877. Hart, Rev. H. Martyn, M.A. Dub. Inc. St. Germain's
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 1874. Hartrich, Rev. E. J. A.M. T.C.D. *Parsonage, Donegal*
Pass, Belfast.
 1869. Harvard, Rev. John, *Parsonage House, Lady Margaret*
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 1875. Henry, Rev. P. Shuldham, D.D. M.R.I.A. President of
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 1872. Heurtley, Rev. Charles Abel, D.D. Canon of Ch. Ch.
 Oxford, Margaret Professor of Divinity, Oxford, *Christ*
Church, Oxford.
 1876. Hewson, Rev. E. F. B.A. *Inistioge, co. Kilkenny, Ireland.*
 1877. Hewson, Captain G. F., *Ovington Park, Abresford.*
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 1876. Hogan, Rev. A. Riky, M.A. T.C.D. and Oxon. (com. caus.)
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1874. BARRANDE, Professor JOACHIM, 22, *Rue de l'Odéon, Paris*; 419, *Kleinsite Choteksgasse, Prague*.
 1873. BERSIER, Rev. E. 216, *Boulevard Perière, Paris*.
 1873. ¶ DAWSON, Principal J. W. LL.D. F.R.S. *McGill College, Montreal*.
 1877. HEER, Professor O. D.D. Professor of Botany, *Zurich University, Switzerland*.
 1878. RASSAM, HORMUZD, Esq. (*Nineveh House, Spring Grove, Isleworth*), *The Consulate, Mossul, Turkey*.
 1875. WURTZ, Professor K. A. Past President of the Association of France for the Advancement of Science, *Cabinet de Doyen, Faculté de Médecine, Paris*.
-

HONORARY CORRESPONDENTS.

-
1874. ¶ MAIN, Rev. R. M.A. F.R.S. V.P.R.A.S.
 1873. ¶ NICHOLSON, Professor H. A. M.A. M.D. D.Sc. Ph.D. F.R.S.E. F.G.S. Professor of Natural History at the University of St. Andrew's, *West Port House, St. Andrew's, N.B.*
 1878. STANLEY, H. M. Esq. 30, *Sackville Street, Piccadilly, W.*
 1877. STOKES, Professor G. G.; M.A. D.C.L. LL.D. Dub. F.R.S. Secretary to the Royal Society, Lucasian Professor of Mathematics at Cambridge University, F.C.P.S., R.S. Edin., Soc. Reg. Hib., Lit. et Phil. Soc. Manc., et Med. Chi. Lond. Soc., Honor. Acad. Sci. Berol., Soc. Reg. Sci. Gött., Corresp. Soc. Reg. Sci. Upsal, Soc. Batav. Roterod., Soc. et Acad. Amer., Bost. Soc. Honor. *Lensfield Cottage, Cambridge*.

LOCAL HONORARY SECRETARIES.

- ASTON, Rev. J. M.A. *Northwick Villa, Cheltenham.*
 'BANGOR, The Very Rev. the Dean of, *Deanery, Bangor.*
 BELLAMY, Rev. F. 33, *Ker Street, Devonport.*
 'BROOKS, Rev. Preb. M.A. *Great Ponton R., Grantham.*
 BURGESS, Captain BOUGHEY, *Royal United Service Institution, Whitehall Yard, S.W.*
 'CAMPBELL, Rev. Professor J. M.A. *Presb. Coll. Montreal, C.W. (J. Bain, Esq. Messrs. J. Campbell, St. Bride Street, Ludgate Circus, E.C.).*
 COLLIS, Rev. H. M.A. *St. Philip's Vicarage, Maidstone.*
 COWAN, Rev. E. B.A. *Millbrook R. Ampthill, Bedfordshire.*
 DALLINGER, Rev. W. H. *Woolton, Liverpool.*
 DANKS, Rev. G. W. M.A. *Gainsborough.*
 DAVIS, Rev. W. B. M.A. *The College, Torquay.*
 DUGMORE, Rev. H. H. *Queenstown, South Africa.*
 FLEMING, Rev. T. S. F.R.G.S. *St. Clement's, Leeds (JF).*
 'HARRIS, Rev. J. *Middleham, York.*
 HERFORD, E. Esq. 26, *St. John's Street, Manchester (JF).*
 JOHNSON, Rev. E. *Bellevue Lodge, Dartmouth Park, Forest Hill, S.E.*
 JF KIRK, Rev. John, Professor of Practical Theology in the Evangelical Union Academy at Glasgow, 17, *Greenhill Gardens, Edinburgh.*
 KNAPP, Rev. J. *St. John's Parsonage, Portsea.*
 LINTON, Rev. H. M.A. *St. Paul's Parsonage, Birkenhead.*
 ¶ McCANN, Rev. J. D.D. 19, *Lansdowne Crescent, Glasgow.*
 MACPHERSON, Rev. A. C. M.A. *Shottery House, Clifton.*
 PHAYRE, Rev. R. M.A. *West Raynham Rectory, Brandon.*
 PRICE, Rev. A. C. M.A. *Chesterton, Loats Rd., Clapham Park, S.W.*
 PRESENÉE, Rev. E. de B. Th. *Paris.*
 PRITCHARD, Rev. R. B.A. *Whitchurch Rectory, Stratford-on-Avon.*
 '¶ RULE, Rev. W. H. D.D. *Clyde Road, Croydon.*
 ¶ SAVILE, Rev. B. W. M.A. *Shellingford Rectory, Exeter.*
 STEWART, E. W. Esq. 8, *Belgrave Villas, Lee, S.E.*
 ¶ WHEATLEY, J. H. Esq. Ph.D. F.G.S. *Abbey View, Sligo.*
 WILLIS, Rev. J. T. M.A. *Rhosmarket Rectory, Milford Haven.*
 WILLIS, Rev. T. B.A. (Ex-Prebend of Limerick). *Purbrook, Cosham, Hants.*

LIBRARY.

The List of Works in the Library is published separately from the volume.

The names of the Donors to the Library appear in the preliminary proceedings of each meeting.

SOCIETIES EXCHANGING TRANSACTIONS WITH THE INSTITUTE.

American Philosophical Society.
 Canadian Institute.
 Geological Society.
 Royal Colonial Institute.
 Royal Geographical Society.
 Royal Institution.
 Royal Society.
 Royal United Service Institution.
 Smithsonian Institution (Washington).
 Society of Arts.
 Society of Biblical Archaeology.
 South Kensington Museum.
 United States Government Geological and Geographical Survey.
 Barrow Naturalists' Field Club.
 Warwickshire Natural History Society and Naturalists' Field Club.

OBJECTS, CONSTITUTION, AND BYE-LAWS
OF
The Victoria Institute,
OR
Philosophical Society of Great Britain.

Adopted at the First Annual General Meeting of the Members and Associates, held on Monday, May 27th, 1867.

(Revised at the Annual Meeting, June 15, 1874, and Jan. 4, 1875.)

§ I. *Objects.*

1. THE VICTORIA INSTITUTE, OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN, is established for the purpose of promoting the following objects, viz. :—

First. To investigate fully and impartially the most important questions of Philosophy and Science, but more especially those that bear upon the great truths revealed in Holy Scripture ; with the view of reconciling any apparent discrepancies between Christianity and Science.

Second. To associate together men of Science and authors who have already been engaged in such investigations, and all others who may be interested in them, in order to strengthen their efforts by association ; and, by bringing together the results of such labours, after full discussion, in the printed transactions of an Institution : to give greater force and influence to proofs and arguments which might be little known, or even disregarded, if put forward merely by individuals.

- Third. To consider the mutual bearings of the various scientific conclusions arrived at in the several distinct branches into which Science is now divided, in order to get rid of contradictions and conflicting hypotheses, and thus promote the real advancement of true Science; and to examine and discuss all supposed scientific results with reference to final causes, and the more comprehensive and fundamental principles of Philosophy proper, based upon faith in the existence of one Eternal God, who, in His wisdom, created all things very good.
- Fourth. To publish Papers read before the Society in furtherance of the above objects, along with full reports of the discussions thereon, in the form of a Journal, or as the Transactions of the Institute.
- Fifth. When subjects have been fully discussed, to make the results known by means of Lectures of a more popular kind, and to publish such Lectures.
- Sixth. To publish English translations of important foreign works of real scientific and philosophical value, especially those bearing upon the relation between the Scriptures and Science; and to co-operate with other philosophical societies at home and abroad, which are now or may hereafter be formed, in the interest of Scriptural truth and of real science, and generally in furtherance of the objects of this Society.
- Seventh. To found a Library and Reading Rooms for the use of the Members and Associates of the Institute, combining the principal advantages of a Literary Club.

§ II. *Constitution.*

1. The Society shall consist of Members and Associates, who in future shall be elected as hereinafter set forth.
2. The government of the Society shall be vested in a Council, to which members only shall be eligible, consisting of a President; two or more (not exceeding seven) Vice-presidents, a Treasurer, one or more Honorary Secretaries, and twelve

or more (not exceeding twenty-four) Ordinary Members of Council, who shall be elected at the Annual General Meeting of the Members and Associates of the Institute. But, in the interval between two annual meetings, vacancies in the Council may be filled up by the Council from among the Members of the Society; and the Members chosen as Trustees of the funds of the Institute shall be *ex officio* Members of Council.

3. Any person desirous of becoming a Member or Associate shall make application for admission by subscribing the Form A of the Appendix, which must be signed by two Members of the Institute, or by a Member of Council, recommending the candidate for admission as a Member; or by any one Member of the Institute, for admission as an Associate.

4. Upon such application being transmitted to one of the Secretaries, the candidate for admission may be elected by the Council, and enrolled as a Member or Associate of the Victoria Institute, in such manner as the Council may deem proper; having recourse to a ballot, if thought necessary, as regards the election of Members; in which case no person shall be considered as elected unless he have three-fourths of the votes in his favour.

5. Application for admission to join the Institute being thus made by subscribing Form A, as before prescribed, such application shall be considered as *ipso facto* pledging all who are thereupon admitted as Members or Associates to observe the Rules and Bye-Laws of the Society, and as indicative of their desire and intention to further its objects and interests; and it is also to be understood that only such as are professedly Christians are entitled to become *Members*.

6. Each Member shall pay an Entrance Fee of One Guinea, and an Annual Contribution of Two Guineas. A Donation of Twenty Guineas shall constitute the donor a Life Member.

7. Each Associate shall pay an Annual Contribution of One Guinea. A donation of Ten Guineas shall constitute the donor a Life Associate.

8. The Annual Contributions shall be considered as due in advance on the 1st day of January in each year, and shall be

paid within three months after that date; or, in the case of new admissions, within three months after election.

9. Any Member or Associate who contributes a donation in one sum of not less than Sixty Guineas to the funds of the Institute shall be enrolled as a Vice-Patron thereof, and will thus also become a Life Member or Life Associate, as the case may be.

10. Should any member of the Royal Family hereafter become the Patron, or a Vice-Patron, or Member of the Institute, the connection shall be regarded as purely Honorary; and none of the Rules and Bye-Laws relating to donations, annual contributions, or obligations to serve in any office of the Society, shall be considered as applicable to such personages of Royal Blood.

11. Any Member or Associate may withdraw from the Society at any time, by signifying a desire to do so by letter, addressed to one of the Secretaries; but such shall be liable for the contribution of the current year, and shall continue liable for the annual contribution, until all sums due to the Society from such Member or Associate shall have been paid, and all books or other property borrowed from the Society shall have been returned or replaced.

12. Should there appear cause, in the opinion of the Council, for the exclusion from the Society of any Member or Associate, a private intimation may be made by direction of the Council, in order to give such Member or Associate an opportunity of withdrawing from the Society; but, if deemed necessary by the Council, a Special General Meeting of Members shall be called for the purpose of considering the propriety of expelling any such person: whereat, if eleven or more Members shall ballot, and a majority of those balloting shall vote that such person be expelled, he shall be expelled accordingly. One month's notice, at least, shall be given to the Members of any such Special General Meeting.

13. Non-resident Members and Associates, or others desirous of promoting the objects and interests of the Institute, may be elected by the Council to act as Corresponding Mem-

bers abroad, or as Honorary Local Secretaries, if within the United Kingdom, under such arrangements as the Council may deem advisable.

14. The whole property and effects of the Society shall be vested in two or more Trustees, who shall be chosen at a General Meeting of the Society.

14a. Special donations to the general fund, whether from Members, Associates, or others desirous of promoting the objects and interests of the Institute, shall be invested in the names of the Trustees.

14b. The Trustees are empowered to invest the Endowment Fund in other securities than Three per Cent. Annuities. Such other securities being, the Bonds of the Corporation of London, or Guaranteed Indian Railway Debentures, or Debenture Stocks.

14c. All moneys received on account of the Institute shall be duly paid to its credit at the Bankers, and all cheques shall be drawn, under authority of the Council, and shall be signed by the Honorary Treasurer and Honorary Secretary.

15. The accounts shall be audited annually, by a Committee, consisting of two Members,—one of whom may be on the Council,—to be elected at an Ordinary Meeting of the Society preceding the Anniversary Meeting. This Committee shall make a written Report to the Council at the first Meeting after such audit, and also to the Institute, upon the day of the Annual General Meeting,—stating the balance in the Treasurer's hands, and the general state of the funds of the Institute.

16. Both Members and Associates shall have the right to be present to state their opinion, and to vote by show of hands at all General and Ordinary Meetings of the Society; but Members only shall be entitled to vote by ballot, when a ballot is taken in order to determine any question at a General Meeting.

§ III. *Bye-Laws* (Privileges).

1. A Member or Associate, when elected, shall be so informed by the Secretary in a printed copy of the letters, Form B, in the Appendix.

2. Members and Associates shall not be entitled to any privileges, or have the right to be present, or to vote at any of the Meetings of the Society, till they have paid the contributions due by them.

3. Annual subscriptions shall be considered as in arrear, if not paid on or before 31st March in each year, or within three months after election, as the case may be.

4. Should any annual subscription remain in arrear to the 30th June, or for six months after election, the Treasurer shall cause to be forwarded to the Member or Associate from whom the subscription is due, a letter, Form D, in the Appendix, unless such Member or Associate reside out of the United Kingdom; in which case the Form D shall not be sent unless the subscription continues unpaid till the 30th September.

5. If any arrears be not paid within twelve months, the Council shall use their discretion in erasing the name of the defaulter from the list of Members or Associates.

6. Members shall be entitled to introduce two Visitors at the Ordinary Meetings of the Society; and to have sent to them a copy of all the papers read before the Society, which may be printed in its Transactions* or otherwise, and of all other official documents which the Council may cause to be printed for the Society; they will also be entitled to a copy of all such translations of foreign works or other books as are published under the auspices of the Society in furtherance of Object 6 (§ I.).

7. Associates may introduce one visitor at the Ordinary Meetings, and shall be entitled to all the minor publications of the Society, and to a copy of its Transactions during the period

* And the Transactions issued in the years during which they have not subscribed may be purchased at half price.

of their being Associates, but not to the translations of foreign works or other books above referred to.* It shall, however, be competent to the Council of the Society, when its funds will admit of it, to issue the other publications of the Society to Associates, being ministers of religion, either gratuitously or at as small a charge as the Council may deem proper.

8. When it shall be found necessary to send the letter, Form D, to any Member or Associate who may be in arrear, the printed papers and other publications of the Society shall cease to be sent to such Member or Associate till the arrears are paid; and, until then, he shall not be allowed to attend any Meeting of the Society, nor have access to any public rooms which may be in its occupation.

9. The Library† shall be under the management and direction of the Council, who are empowered to designate such works as shall not be allowed to circulate.

10. Each Member‡ shall be allowed to borrow books from the Library, and to have not more than three volumes in his possession at the same time; pamphlets and periodical publications not to be kept above fourteen days, nor any other book above three weeks.

11. Members who may borrow books from the Library shall be answerable for the full value of any work that is lost or injured.

12. Periodical publications shall remain on the table for a month, other books for a fortnight, after they are received.

13. When a book or pamphlet is wanted, and has been the stipulated time in the possession of any Member, the Secretary shall request its return, and a fine of threepence a day shall be incurred for every day it may be detained, which fine shall commence on the third day after the transmission of the notice in the case of town Members, and after the sixth day in the case of country Members; and until the return of such works,

* These, as well as the Transactions issued in the years during which they have not subscribed, may be purchased at half price.

† For the use of the Members and Associates.—See 7th Object.

‡ Members only are allowed to take books away.

and the discharge of all fines incurred, no further issue of books shall be permitted to the Member applied to.

14. The books shall be ordered in for inspection at such times as the Council shall appoint, and a fine of half-a-crown shall be incurred for neglecting to send in books by the time required in the notice.

15. A Book shall lie on the Library table in which Members may insert, for the consideration of the Council, the titles of such works as they desire to be purchased for the Institute.

§ IV. *Bye-Laws* (General, Ordinary, and Intermediate Meetings).

1. A General Meeting of Members and Associates shall be held annually on May 24th (being Her Majesty's birthday, and the Society's anniversary), or on the Monday following, or on such other day as the Council may determine as most convenient, to receive the Report of the Council on the state of the Society, and to deliberate thereon; and to discuss and determine such matters as may be brought forward relative to the affairs of the Society; also, to elect the Council and Officers for the ensuing year.

2. The Council shall call a Special General Meeting of the Members and Associates, when it seems to them necessary, or when required to do so by requisition, signed by not less than ten Members and Associates, specifying the question intended to be submitted to such Meeting. Two weeks' notice must be given of any such Special General Meeting; and only the subjects of which notice has been given shall be discussed thereat.

3. The Ordinary Meetings of the Society shall usually be held on the first and the Intermediate Meetings on the third Monday evenings in each month, from November to June inclusive, or on such other evenings as the Council may determine to be convenient; and a printed card of the Meetings for each Session shall be forwarded to each Member and Associate.

4. At the Ordinary and Intermediate Meetings the order of

proceeding shall be as follows:—The President, or one of the Vice-Presidents, or a Member of the Council, shall take the chair at 8 o'clock precisely, the minutes of the last Ordinary or Intermediate Meeting shall be read aloud by one of the Secretaries, and, if found correct, shall be signed by the Chairman; the names of new Members and Associates shall be read; the presents made to the Society since their last Meeting shall be announced; and any other communications which the Council think desirable shall be made to the Meeting. After which, the Paper or Papers intended for the evening's discussion shall be announced and read, and the persons present shall be invited by the Chairman to make any observations thereon which they may wish to offer.

The claims of Members and Associates to take part in a discussion are prior to those of Visitors. The latter, when desiring to speak upon any Paper, must first send their cards to the Chairman and ask permission (unless they have been specially invited by the Council "to attend, and join in considering the subject before the Meeting," or are called upon by the Chairman). 1875.

5. The Papers read before the Society, and the discussions thereon, fully reported, shall be printed by order of the Council; or, if not, the Council shall, if they see fit, state the grounds upon which this Rule has been departed from, in the printed Journal or Transactions of the Society.

6. The Council may at their discretion authorize Papers of a general kind to be read at any of the Ordinary or Intermediate Meetings, either as introductory lectures upon subjects proper to be afterwards discussed, or as the results of discussions which have taken place, in furtherance of the 5th Object of the Society (§ I.).

7. With respect to Intermediate Meetings, the Papers read at which are not necessarily printed nor the discussions reported,* the Council, at its discretion, may request any lecturer or author of a paper to be read thereat, previously to submit an outline of the proposed method of treating his subject.

* So arranged when the "Intermediate Meetings" were commenced, 16th-January, 1871.

8. At the Ordinary or Intermediate Meetings no question relating to the Rules or General Management of the affairs of the Society shall be introduced, discussed, or determined ; but

At the First Ordinary Meeting in each month, Members having notices of motion on matters of detail relating to the Institute, shall give such notices in writing, after the Minutes have been read and confirmed, and any announcements in regard to elections have been made, and at no other time. Each notice shall be signed by its mover and seconder. Such notices will be fixed up in the reading-room, and considered at the following Ordinary Meeting, provided the mover be then present to explain his views ; the discussion of the same to terminate not later than half-past 8 o'clock. For these purposes all Ordinary Meetings shall be considered Special.

§ V. *Bye-Laws* (Council Meetings).

1. The Council shall meet at least once every month from November to June inclusive, or at any other time and on such days as they may deem expedient. The President, or any three Members of the Council, may at any time call a Special Meeting, to which the whole Council shall be summoned.

2. At Council Meetings three shall be a quorum ; the decision of the majority shall be considered as the decision of the Meeting, and the Chairman shall have a casting vote.

3. Minutes of the proceedings shall be taken by one of the Secretaries, or, in case of his absence, by some other Member present, whom the Chairman may appoint ; which minutes shall afterwards be entered in a minute-book kept for that purpose, and read at the next Meeting of the Council, when, if found correct, they shall be signed by the Chairman.

§ VI. *Bye-Laws* (Papers).

1. Papers presented to be read before the Society shall, when read, be considered as the property of the Society, unless there shall have been any previous engagement with its author to the contrary ; and the Council may cause the same to be published in any way and at any time they may think proper after having been read. If a Paper be not read, it shall be returned to the

author; and if a Paper be not published within a reasonable time after having been read, the author shall be entitled himself to publish it, and he may borrow it for that purpose.

2. When a Paper is sent to the Society for the purpose of being read, it shall be laid before the Council, who shall refer it to two of that body, or of the other Members or Associates of the Society whom they may select, for their opinions as to the character of the Paper and its fitness or otherwise for being read before the Society, which they shall state as briefly as may be, in writing, along with the grounds of their respective opinions. Should one of such opinions be adverse to the Paper and against its being read before the Society, then it shall be referred to some other referee, who is unaware of the opinion already pronounced upon the Paper, in order that he may state his opinion upon it in like manner. Should this opinion be adverse to the Paper, the Council shall then consult and decide whether the Paper shall be rejected or read; and, if rejected, the Paper shall be returned to the author with an intimation of the purport of the adverse opinions which have been given with respect to it; but the names of the referees are not to be communicated to him, unless with their consent, or by order of the Council. All such references and communications are to be regarded as confidential, except in so far as the Council may please to direct otherwise.

3. The Council may authorize Papers to be read without such previous reference for an opinion thereon; and when a Paper has been referred, and the opinion is in favour of its being read in whole or in part, the Council shall then cause it to be placed in the List of Papers to be so read accordingly, and the author shall receive due notice of the evening fixed for its reading.

4. The authors of Papers read before the Society shall, if they desire it, be presented with twenty-five separate copies of their Paper, with the discussion thereon, or with such other number as may be determined upon by the Council.

§ VII. *Bye-Laws* (General).

1. The government of the Society and the management of its concerns are entrusted to the Council, subject to no other restrictions than are herein imposed, and to no other interference than may arise from the acts of Members in General Meeting assembled.

2. With respect to the duties of the President, Vice-Presidents, and other Officers and Members of Council, and any other matters not herein specially provided for, the Council may make such regulations and arrangements as they deem proper, and as shall appear to them most conducive to the good government and management of the Society, and the promotion of its objects. And the Council may hire apartments, and appoint persons not being Members of the Council, nor Members or Associates of the Institute, to be salaried officers, clerks, or servants, for carrying on the necessary business of the Society; and may allow them respectively such salaries, gratuities, and privileges, as to them, the Council, may seem proper; and they may suspend any such officer, clerk, or servant from his office and duties, whenever there shall seem to them occasion; provided always, that every such appointment or suspension shall be reported by the Council to the next ensuing General Meeting of the Members, to be then confirmed or otherwise, as such Meeting may think fit.

FORM A.

FORM OF APPLICATION for the Admission of Vice-Patrons, Members, or Associates of the VICTORIA INSTITUTE.

[Date] _____ 187 .

*I hereby desire to be enrolled a **

INSTITUTE, OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN.

* Here insert
Vice-Patron,
or
Member,
or
Life Member,
or
Associate,
or
Life Associate.

Candidate's ordinary Signature,
and full name, if necessary.

Title, Profession, University degree,
&c., or other distinction.

Address

If an Author, the name of the Can-
didate's works may be here stated.

To be signed by a Member or Associate
or a Member of Council, or an Honorary
Officer of the Institute, in the case of a
Member; or by any one Member or Associate
in the case of an Associate.

To the Honorary Officers of the VICTORIA INSTITUTE,
7, Adelphi Terrace, Strand, London, W.C.

FORM B.

SIR,

18 .

I have the pleasure to inform you, with reference to your application dated the _____, that you have duly been elected a _____ of the VICTORIA INSTITUTE, OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN.

I have the honour to be, Sir,

Your faithful Servant,

To _____

Hon. Sec.

FORM C.

(Bankers) Messrs. _____

* Please pay Messrs. RANSOM, BOUVERIE, & Co. my Annual Contribution of Two GUINEAS to the VICTORIA INSTITUTE, due on the 1st of January, 187 , and the same amount on that day in every succeeding year, until further notice.

I am,

Your obedient Servant,

187 .

If this Form be used, please add your Signature, Banker's Name, and the Date, and return it to the Office, 7, Adelphi Terrace. Receipt-stamp required.

* The above is the form for Members. The form for Associates is the same, except that the Subscription stands as "ONE GUINEA."

FORM D.

SIR,

18 .

I am directed by the Council of the VICTORIA INSTITUTE to remind you that the Annual Contribution due by you to the Society for the year _____ is now six months in arrear; and I have to call attention to the Bye-Laws of the Institute, § III., ¶ 4 and 8, and to request you to remit to me the amount due (viz. £) by Post-office order, or otherwise, at your earliest convenience.

I have the honour to be, Sir,

Your faithful Servant,

To _____

Treasurer.

FORM E.

Form of Bequest.

I give and bequeath to the Trustees or Trustee for the time being of THE VICTORIA INSTITUTE, OR PHILOSOPHICAL SOCIETY OF GREAT BRITAIN, to be applied by them or him for the purposes of the said Society, the sum of £ , such sum to be wholly paid out of such part of my personal estate as may be lawfully applied to the purposes of charity, and in priority to all other legacies. And I declare that the receipt of the Trustees or Trustee for the time being of the said Society shall be a good discharge to my Executors for the said legacy.

PROGRESS OF THE INSTITUTE.

Members and Associates on 1st January, 1871, 203. Joined since.—In 1871, 91;—1872, 109;—1873, 110;—1874, 111;—1875, 115;—1876, 107;—1877, 100;—1878, 101.

THE JOURNAL OF THE TRANSACTIONS.

Since the Inauguration of the Society, on the 24th of May, 1866, the following Papers have been read :—The Quarterly Parts of the Journal are indicated by the numbers prefixed. (*The volumes are sold at One Guinea to Non-Members; Half-a-Guinea to Members and Associates.*)

FIRST SERIES, VOLS. 1 TO 6.

VOL. I.

1. A Sketch of the Existing Relations between Scripture and Science. By the late GEORGE WARINGTON, Esq., F.C.S.
2. On the Difference in Scope between Scripture and Science. By the late C. MOUNTFORD BURNETT, Esq., M.D., Vice-President V.I.
On Comparative Philology. By the Rev. ROBINSON THORNTON, D.D., Vice-President V.I.
On the Various Theories of Man's Past and Present Condition. By the late JAMES REDDIE, Esq., Hon. Sec. V.I.
3. On the Language of Gesticulation and Origin of Speech. By Professor J. R. YOUNG.
On Miracles: their Compatibility with Philosophical Principles. By the Rev. W. W. ENGLISH, M.A.
Thoughts on Miracles. By the late E. B. PENNY, Esq.
On the General Character of Geological Formations. By the late E. HOPKINS, Esq., C.E.
4. On the Past and Present Relations of Geological Science to the Sacred Scriptures. By the Rev. Professor JOHN KIRK.
On the Lessons taught us by Geology in relation to God. Rev. J. BRODIE, M.A.
On the Mutual Helpfulness of Theology and Natural Science. By Dr. GLADSTONE, F.R.S.
On Falling Stars and Meteorites. By the late Rev. W. MITCHELL, M.A., Vice-President V.I.

(*The above Papers, with the Discussions thereon, and with "Scientia Scientiarum; being some Account of the Origin and Objects of the Victoria Institute," with the Reports of the Provisional Proceedings, and the Inaugural Address by the late Rev. Walter Mitchell, M.A., Vice-President, form Volume I. of the "Journal."*)

VOL. II.

5. On the Terrestrial Changes and Probable Ages of the Continents, founded upon Astronomical Data and Geological Facts. By the late EVAN HOPKINS, Esq., C.E., F.G.S.
On the Credibility of Darwinism. By the late GEORGE WARINGTON, Esq., F.C.S.
On the Credibility of Darwinism. By the late JAMES REDDIE, Esq., Hon. Sec. V.I.
6. On Utilitarianism. By the late JAMES REDDIE, Esq., Hon. Sec. V.I.
On the Logic of Scepticism. By the Rev. ROBINSON THORNTON, D.D., V.P.
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